

We, the undersigned members of the committee have approved this thesis

SURGEONS OF THE SEVERED LIMB:

CONFEDERATE MILITARY MEDICINE IN ARKANSAS, 1863-1865

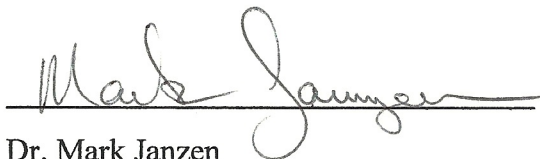
By: Rachel M. Kellum



Dr. Stanley Adamiak
Professor of History, Committee Chairperson



Dr. Kenny L. Brown
Professor of History



Dr. Mark Janzen
Director of Museum Studies

The University of Central Oklahoma

**Surgeons of the Severed Limb:
Confederate Military Medicine in Arkansas, 1863-1865**

A Thesis Submitted to
the Faculty of the Jackson College of Graduate Studies
in Candidacy for the Degree of
Master of Arts
Department of History and Geography

by

Rachel M. Kellum

Edmond, OK

July 2014

Contents

Acknowledgements	iv
Abstract	v
Chapter 1. Introduction	1
Chapter 2. Surgeons	34
Chapter 3. Camp and Hospital Life	65
Chapter 4. Disease and Medication	92
Conclusion	130
Bibliography	138

Acknowledgements

This project would not have been possible without the constant support of numerous people. First, I would like to express my sincere gratitude to Dr. Stanley Adamiak for his guidance, encouragement, and dedication throughout this entire process. I am also appreciative of the thoughtful comments and valuable advice of Dr. Kenny Brown and Dr. Mark Janzen. I am especially grateful for the tremendous efforts of Dr. Bill Gurley and Amanda Saar at the University of Arkansas for Medical Sciences. Their research assistance provided me with source materials that proved vital to this study. In addition, I would like to thank Jason Harris for his commitment to helping me succeed.

My unending gratitude goes out to my parents for their constant support, financially, emotionally, and spiritually, in all of my endeavors. Without their love and devotion, none of this would be possible. Finally, I give my deepest appreciation to my husband, Ben, whose endless encouragement, matchless patience, and unwavering faith in me has made this dream of mine a reality.

Abstract

By bridging two frequently overlooked subjects in Civil War historiography, medicine and the conflict in the West, this work provides a novel and important perspective on the war in the Trans-Mississippi by examining the Confederate surgeons of Arkansas, their place within the army, their treatment of the wounded, their microbial foes, and their efforts to combat these enemies, particularly after the loss of the Mississippi River. Rebel surgeons in Arkansas faced extreme hardships in their attempts to care for the sick and wounded, even more so than their counterparts east of the Mississippi River due to the isolation of the westernmost part of the Confederacy. Despite the formidable obstacles, the vast majority of these doctors remained committed to the health and safety of their men. These physicians served in small tent hospitals and filthy camps, on the gruesome battlefield, and on the sides of dusty roads. They worked all night in field hospitals performing operations by moonlight in order to save the lives of their soldiers. They spent weeks at battlefields after the final shot had been fired, searching for casualties and treating the injured often without regard to their own safety or sustenance. They labored over hospital beds, committing themselves to providing care and comfort to the sick and wounded. Southern physicians and their staffs sought to diagnose and treat diseases, heal wounds, and provide comfort to the fighting men who were becoming increasingly fatigued mentally, physically, and emotionally as the conflict continued. Though they diligently strove to maintain a healthy corps, a lack of knowledge, experience, personnel, and supplies hindered their efforts and ultimately limited their overall effectiveness.

Chapter One

Introduction

In the spring of 1861, Confederate forces opened fire on the Federal garrison at Fort Sumter, signaling the beginning of the most devastating and deadly war in American history. Both sides anticipated a war in which one decisive battle would speedily end the conflict. Instead, they fought for four long years. The Union and Confederate armies each amassed unprecedented numbers of troops and experienced an overwhelming number of casualties. In the end, the Northern victory ensured the reunion of a divided nation. Though that fateful day at Sumter occurred over a century and a half ago, the great conflict remains far from forgotten throughout the nation.¹

Firsthand accounts of the conflict told a gruesome tale. Soldiers experienced disease and death at an alarming rate. Rifled barrels meant better accuracy from afar. The advent of the Minie ball, a conical shaped bullet, caused devastating wounds unlike anything inflicted by the rounded bullet. The close proximity of men and the general lack of hygiene in camps allowed infections to spread rapidly. Surgeons lacked experience and education. Germ theory had not yet been proposed; medical knowledge remained extraordinarily primitive by today's standards. Doctors, overwhelmed by the sheer number of casualties, worked pragmatically. Physicians knew that the longer one waited to amputate a limb, the lower the survival rate of the amputee, so amputations were commonplace, giving surgeons reputations as "butchers."²

¹James McPherson, *Battle Cry of Freedom: The Civil War Era* (New York: Oxford University Press, 1988), ix.

²Fielding H. Garrison, *An Introduction to the History of Medicine* (Philadelphia: W.B. Saunders, 1929), 101, 576-7, 582.

But these horrific descriptions fail to depict the entire narrative. Many practitioners truly cared for their men and made tremendous efforts to save the lives of their troops. Though unprepared for what they would face at the outbreak of the war, surgeons adapted to their conditions. Though undersupplied, they were resourceful, finding herbal remedies and makeshift ways of treating patients. Though without experience, they learned from their mistakes and continuously tried to improve their practices. Perhaps they did not have germ theory to explain *why* certain treatments worked, but they did know *if* they worked; successful therapies continued, failures did not.³

In the Trans-Mississippi region, the name for the Confederate states located west of the Mississippi River, rebel soldiers faced extreme difficulties as the vast territory became increasingly isolated from the government in Richmond. Western forces concentrated their strength in the border state of Arkansas, hoping to resist any Northern advances from Missouri and protect Southern resources in Arkansas, Texas, and Louisiana. But a host of obstacles worked to hinder the success of Confederate efforts in the West. By early 1862, Union forces had made significant inroads into the state. In 1863, Yankee troops took control of the Mississippi River, effectively severing the region from the rest of the Confederacy. Later that year, rebels lost the state capital of Little Rock. Throughout the remainder of the conflict, the two armies engaged in a brutal battle

³H.H. Cunningham, *Doctors in Gray: The Confederate Medical Service* (Baton Rouge: Louisiana State University Press, 1958), 260-4; Henry M. Dye, "The Illustrated Casebook of Dr. Henry M. Dye," in author's possession; Frank Rainey, "Reminiscences of Dr. Frank Rainey," in *Reminiscences of the Boys in Gray*, compiled by Mamie Yeary (Dallas: Wilkinson Printing Company, 1912), 627-8; Mrs. T.J. Gaughan, ed., *Letters of a Confederate Surgeon, 1861-65* (Camden, AR: The Hurley Co., Inc., 1960), 110-6.

for Arkansas until the Trans-Mississippi Department officially surrendered to the United States authorities on May 26, 1865.⁴

The story of the American Civil War has both fascinated and horrified Americans for nearly a century and a half. Historians have analyzed and dissected, scrutinized and debated the conflict more than any other event in American history.⁵ These studies have produced a prolific amount of scholarship, but there remain some aspects of the war that have yet to be fully explored. Though initially very few researchers examined the role of medicine in the conflict, recent scholars have expanded these efforts and brought the topic into mainstream Civil War historiography. At the same time, historians have also sought to investigate the often-overlooked Trans-Mississippi theater of war. However, scholarship uniting these two fields, medicine and the conflict in the West, has not yet attracted widespread public attention.

Publishing in the 1870s and 1880s, Joseph K. Barnes and Harvey E. Brown became the first to consider the medical history of the American Civil War. Barnes, the US Army Surgeon General, published *The Medical and Surgical History of the War of the Rebellion, 1861-1865*, a six volume collection of data on surgeries and diseases compiled from accounts from the war's surgeons.⁶ In 1873, Brown described the history of the US Army Medical Department. He recognized his personal bias when discussing the war period, insisting that he was too close in proximity to the conflict to present an

⁴Mark K. Christ, ed. *Rugged and Sublime: The Civil War in Arkansas* (Fayetteville, AR: University of Arkansas Press, 1994), 45-58, 103-5, 144-6. General Orders No. 61, May 26, 1863, *O.R.*, ser. I, vol. XLVIII, part ii, 604-6.

⁵McPherson, *Battle Cry of Freedom*, ix.

⁶Joseph K. Barnes, ed., *The Medical and Surgical History of the War of the Rebellion, 1861-1865*, 6 vols. (Washington: Government Printing Office, 1870-88). Hereafter this will be cited as *MSHWR*.

objective analysis. Instead, he merely summarized the contents of the official records pertaining to the medical field during this time.⁷ Together these two men set an important precedent. They were the first to contend that medicine played an important role in the war and deserved the attention of future historians.

Scholars waited nearly sixty years before furthering this scholarship. From 1931 to 1940, three authors published studies on the topic. The first, Louis Casper Duncan, attempted to expand upon his predecessors' work in his book, *The Medical Department of the United States Army in the Civil War*. Duncan viewed himself as far enough removed from the conflict that he could impartially analyze the role of the organization. Ultimately, his study distinguished itself in its attempt to explain the impact that Civil War medicine had on military health care and sanitation efforts.⁸

In 1937, Courtney Robert Hall became the first trained historian to consider medicine during the conflict when he wrote about the Confederate Medical Department and its affect on war operations.⁹ Hall argued that one of the main reasons for the rebel loss was the lack of medical aid for Southern troops. He contended that the scarcity of supplies did not result from an inefficient or ineffective department, but rather because of

⁷Harvey E. Brown, *The Medical Department of the United States Army from 1775 to 1873* (Washington, DC: US Government Printing Office, 1873), 215. Brown served as an assistant surgeon during the Civil War and later in the Surgeon General's office in Washington. Albert Allemann, "Brown, Harvey E." in *American Medical Biographies*, ed. Howard A. Kelly and Walter L. Burrage (Baltimore, MD: The Norman, Remington Company, 1920), 153.

⁸Louis Casper Duncan, *The Medical Department of the United States Army in the Civil War* (Carlisle Barracks, PA: Medical Field Service School, 1931). Duncan, an extremely skilled medical officer, published several volumes on military medicine during a time when the field of medical history had not yet been firmly established. However, he admitted that he wrote the work to inspire the medical staff in the US Army. To accomplish this task, he primarily focused on the achievements, rather than shortcomings, of the medical officers of the army, showing a flaw in his scholarship. John T. Greenwood, "Louis Casper Duncan, M.D.," *Military Surgeon* 87, no. 6 (December 1940): 585, accessed October 14, 2012, <http://history.amedd.army.mil/booksdocs/rev/MedMen/LouisCDuncan.html>.

⁹Courtney Robert Hall, "The Influence of the Medical Department Upon Confederate War Operations," *The Journal of the American Military History Foundation* 1, no. 2 (Summer 1937): 46.

inadequate manufacturing facilities needed to produce medical supplies and medications and a paucity of capital to construct new ones. The medical department, he claimed, functioned as a well-run organization that helped to keep the entire Confederate military operational for as long as it did. Hall was not only the first to consider the impact medicine had on war operations, but he was also the first to discuss medicine on the Southern side of the conflict and the first to offer a decidedly positive view on the medical aspect of the war.¹⁰

Three years later, one of the most influential and well-known historians documenting medicine during the Civil War, George Worthington Adams, published his first analysis of the subject. His article, “Confederate Medicine,” portrays Southern practitioners as men doing their best, yet constrained by limited knowledge, skill, and resources. Adams argued that despite their best efforts, these physicians failed to have any lasting impact on the war effort or future medical advances. He depicted medicine and healthcare in a starkly desolate manner, making him the first historian to cast Civil War medicine in a distinctly negative light.¹¹ He became a forerunner in his field and helped introduce the idea of medicine as an important component within the conflict.¹² Adams was the first historian to consider medicine in general and not focus solely upon the medical departments. His article left another important legacy. He began the article

¹⁰Hall, “The Influence of the Medical Department,” 46-54.

¹¹George Worthington Adams, “Confederate Medicine,” *The Journal of Southern History* 6, no. 2 (May 1940): 151-66.

¹²Southern Illinois University Special Collections Research Center, “Adams, George Worthington,” Morris Library Special Collections, accessed October 12, 2012, <http://archives.lib.siu.edu/index.php?p=creators/creator&id=205>. Adams attended Illinois College and later, Harvard University where he earned his master’s and doctoral degrees in history, concentrating his studies on Civil War medicine.

by saying, “the Civil War was fought in the very last years of the medical middle ages.”¹³ That simple, yet profound, statement would be an underlying assumption seen throughout the writing of subsequent historians and endured without question for decades to come.

In 1952, Adams published his most noted study *Doctors in Blue: The Medical History of the Union Army in the Civil War*. Along with its counterpart *Doctors in Gray: The Confederate Medical Service* written by Horace Herndon Cunningham, these books represent the most influential and groundbreaking volumes on the topic. Together they set the standard for all future histories of Civil War medicine. In his seminal work, Adams examined the state of medicine in the North and its armies throughout the conflict. Larger in scope than his article, Adams’s book pioneered the comprehensive study of Civil War medicine. Also in contrast to his article, this account offered a remarkably upbeat and optimistic account of the army’s medical corps.¹⁴ *Doctors in Blue* received widespread recognition; nearly every subsequent author on the topic included the title in his or her bibliography.¹⁵

Published in 1958, *Doctors in Gray: The Confederate Medical Service* by historian H. H. Cunningham examines Southern medicine and its practitioners. Cunningham aimed to correct the long held notions that the medical aspects of war were less important than military or political ones and that Confederate medical personnel were incompetent, achieving little during the conflict. He outlined the contributions made

¹³Adams, “Confederate Medicine,” 151.

¹⁴George Worthington Adams, *Doctors in Blue: The Medical History of the Union Army in the Civil War* (New York: Schuman, 1952).

¹⁵Adams, *Doctors in Blue*, 112-35, 228-30. Also written during this time, but with a more narrow scope and influence was William Q. Maxwell’s *Lincoln’s Fifth Wheel: The Political History of the United States Sanitary Commission*, which detailed the history of the this organization and its contribution to the war effort. William Quentin Maxwell, *Lincoln’s Fifth Wheel: The Political History of the United States Sanitary Commission* (New York: Longmans, Green, & Co., 1956), 1-7, 292-310.

by physicians to both the military effort and to subsequent medical developments.¹⁶

Cunningham's book proved the first comprehensive study of the rebel army's medical service and has remained a definitive history on the subject since its publication.¹⁷

By the 1960s, scholars were primed to begin building the more specific components of Civil War medicine's historiography. In 1962, historian George W. Smith produced a narrow, concentrated account discussing pharmaceutical manufacturing in the Union army during the Civil War.¹⁸ In 1968, Cunningham followed his work on rebel doctors with a monograph on the medical services at the Battles of Bull Run. He compared not only the Union and Confederate field medical services, but also discussed how the two medical units evolved between these two encounters. This was the first study to consider the medicine during specific battles.¹⁹ Also in 1968, Paul E. Steiner penned a volume on Civil War medicine. In writing *Disease in the Civil War: Natural Biological Warfare in 1861-1865*, he sought to reinterpret the conflict by investigating the role of disease, presenting evidence describing how infections and illnesses affected military affairs. This study added to both the scholarship of Civil War medicine and of

¹⁶Cunningham, *Doctors in Gray*, vii. Cunningham earned a Ph.D. in history at the University of North Carolina under Fletcher M. Green. Green had close ties to the Dunning School of Reconstruction, notorious for its infamous "Lost Cause" ideology and Southern prejudices; University of North Carolina-Greensboro Libraries, "Cunningham, Horace Herndon," North Carolina Literary Map, accessed October 5, 2012; <http://library.uncg.edu/dp/nclitmap/details.aspx?typ=auth&id=4217>. University of North Carolina Libraries, "Fletcher Melvin Green Papers, 1898-1980: Biographical Information," The Southern Historical Collection at the Louis Round Wilson Special Collections Library, accessed October 5, 2012, http://www.lib.unc.edu/mss/inv/g/Green,Fletcher_Melvin.html#d1e181.

¹⁷Louisiana State University Press, "*Doctors in Gray*," accessed January 23, 2013, <http://lsupress.org/books/detail/doctors-in-gray/>.

¹⁸George W. Smith, *Medicines for the Union Army: The United States Army Laboratories During the Civil War* (Madison, WI: American Institute of the History of Pharmacy, 1962), v, 64-76.

¹⁹H.H. Cunningham, *Field Medical Services at the Battles of Manassas (Bull Run)* (Athens: University of Georgia Press, 1968), xi-xii, 92-3.

the conflict at large by interpreting of the entire military conflict from a medical perspective.²⁰

Throughout the 1960s, most of the scholarship followed this pattern of exploring a specific aspect within Civil War medicine, with a few notable exceptions. In 1962, Richard H. Shryock wrote an article examining the medical components of the Civil War and presenting a general overview of healthcare during the conflict.²¹ He insisted that medicine during the war remained largely marginalized or glamorized by scholars because the true story was a gruesome and devastating one. While Adams and Steiner had offered critiques on particular aspects of medicine during the war, Shryock presented an unqualified denigration of the entire field.²² In 1966, Stewart M. Brooks published his own broad history, *Civil War Medicine*. He described the advances made in several different fields including nursing, dentistry, and pharmacy. He also contended that the war resulted in a revolutionary new public awareness of health and sanitation and

²⁰Paul E. Steiner, *Disease in the Civil War: Natural Biological Warfare in 1861-1865* (Springfield, IL: Thomas, 1968), vii-viii, 3-5. Steiner graduated from Northwestern University Medical School with his M.D. degree and later earned his Ph.D. He joined the US Navy and eventually became a renowned pathologist. He was particularly interested in the realm of Civil War medicine and wrote about the topic on multiple occasions. Steiner authored *Physician-Generals in the Civil War* in 1966, one of his most noted works.

²¹Shryock served in both world wars. He earned his Ph.D. in American history at the University of Pennsylvania and spent his professional career teaching at numerous universities. He eventually accepted a position as the Director of the Johns Hopkins Institute of the History of Medicine, the first such department in the United States. While at Johns Hopkins, he taught Maxwell, who though writing before Shryock, was clearly influenced by his teachings. Shryock is considered one of the first medical historians as he helped to create the field of medical history. Owsei Temkin, "Richard Harrison Shryock: 1893-1972," *Journal of the History of Medicine and Allied Sciences* 27, no. 2 (1972): 131-2; W. J. Bell, Jr., "Richard H. Shryock: Life and Work of a Historian," *Journal of the History of Medicine and Allied Science* 29, no. 1 (1974): 15-8, 25-31.

²²Richard H. Shryock, "A Medical Perspective on the Civil War," *American Quarterly* 14, no.2 (Summer 1962): 1138-43.

facilitated a wave of significant medical advancements.²³ Brooks's study went much more in-depth than the studies of Adams or Cunningham and distinguished itself in its consideration of both sides of the conflict and its discussion of several topics that had merely been glossed over in previous scholarship.²⁴

Following these centennial studies, scholars remained relatively silent on the subject until the 1990s. A noteworthy exception to this reticence can be found in James O. Breeden's biography of prominent Southern surgeon Joseph Jones written in 1975. In it, he chronicled Jones's life and service to the Confederacy, highlighting the contributions he made to both medicine and Civil War history. With *Joseph Jones, M.D.*, Breeden began a movement of writing biographies of Civil War era medical professionals.²⁵

During the last decade of the twentieth century, scholars published numerous new studies on Civil War medicine. Frank R. Freeman's *Gangrene and Glory: Medical Care During the American Civil War*, published in 1998, presents perhaps the best history to

²³Stewart M. Brooks, *Civil War Medicine* (Springfield, IL: Charles C. Thomas, 1966), 9, 31-3, 40-2, 73-5, 97-101.

²⁴Brooks, *Civil War Medicine*, 31-3, 40-2, 73-5, 97-101. Other notable studies published during the 1960s include: Robert M. Campbell, "Techniques of Confederate Surgeons," *AORN Journal* 8, no. 1 (July 1968): 43-49; Stanhope Bayne-Jones, *The Evolution of Preventive Medicine in the United States Army, 1607-1939* (Washington, DC: Office of the Surgeon General, 1968).

²⁵James O. Breeden, *Joseph Jones, M.D.: Scientist of the Old South* (Lexington, KY: University Press of Kentucky, 1975), ix-x, 215-31. Following Breeden's example, other historians authored biographies of influential doctors and nurses. Two such authors were Stephen B. Oates and Glenn R. Schroeder-Lein. Oates chronicled the life of Clara Barton, a nurse during the Civil War most famous for her role in establishing the American Red Cross. Schroeder-Lein published a biography of Samuel H. Stout, Superintendent of Hospitals for the Army of Tennessee, documenting his life and instrumental role in the development of mobile hospital units. Stephen B. Oates, *A Woman of Valor: Clara Barton and the Civil War* (New York: Free Press, 1994); Glenna R. Schroeder-Lein, *Confederate Hospitals on the Move: Samuel H. Stout and the Army of Tennessee* (Columbia, SC: University of South Carolina Press, 1994).

date on Civil War medicine.²⁶ Freemon explored the changes in medical practice throughout the conflict by examining specific battles and analyzing changes made on both sides as the war progressed. He also sought to explain the medical history of the war from the perspective of the physicians at the time and not from the perception of a modern doctor. One of his most important contributions to the field was his assertion that physicians tended to be less prejudiced than the general population as they cared for the wounded regardless of the color of their skin or uniform.²⁷

At the turn of this century, new scholarship on the subject flooded the field. In 2000, pharmacist Guy R. Hasegawa continued the discussion on the role of pharmacists and medications during the conflict. He argued that medications played a vital role in the overall functionality of the medical departments on both sides of the war.²⁸ In 2002, Alfred Jay Bollet authored a study that challenged the notion that Civil War surgeons were brutal butchers, presenting solid research to defend his argument.²⁹ Four years later, Robert G. Slawson introduced race into the conversation in a monograph that details the

²⁶Freemon began his career in the US Navy. Later, he went back to school and received his M.D. degree from the University of Florida. After graduation, he accepted a position at the Vanderbilt University School of Medicine. While at Vanderbilt, Freemon's interest in history flourished. He decided to begin a graduate program in history and eventually earned his Ph.D. Because of his expertise in medicine, history, and the military, Freemon was well suited to write a history of Civil War medicine. "Contributors to This Issue," *Civil War History* 33 (March 1987): 4; "Graduation 2005: New emeritus faculty honored at graduation," *Reporter* May 20, 2005, accessed October 10, 2012, <https://www.mc.vanderbilt.edu/reporter/index.html?ID=3986>.

²⁷Frank R. Freemon, *Gangrene and Glory: Medical Care During the American Civil War* (Madison, NJ: Fairleigh Dickinson University Press, 1998), 7-9, 116-24, 190-214, 221-30.

²⁸Guy R. Hasegawa, "Pharmacy in the American Civil War," *Pharmacy in History* 42, no. 3/4 (2000): 67-86. Historian Michael A. Flannery also discussed the role of drugs and druggists in his book *Civil War Pharmacy: A History of Drugs, Drug Supply and Provision, and Therapeutics for the Union and Confederacy*; Michael A. Flannery, *Civil War Pharmacy: A History of Drugs, Drug Supply and Provision, and Therapeutics for the Union and Confederacy* (Binghamton, NY: The Haworth Press, Inc., 2004).

²⁹Alfred Jay Bollet, *Civil War Medicine: Challenges and Triumphs* (Tucson, AZ: Galen Press, 2002), iv-vii, 3-5, 413-27.

untold stories of African American physicians practicing during the conflict.³⁰ In 2007, Cynthia DeHaven Pitcock published a chapter describing medicine in the Trans-Mississippi, offering the first account of healthcare in the West and promoting a more regional interpretation of this subject.³¹ Two years later, Bonnie Brice Dorwart produced a study on medical education in the antebellum era and its effect on Civil War medicine, a topic merely mentioned by previous scholars.³² Robert M. Bedard and John M. Trombold, authored separate biographical articles of Civil War surgeons extolling the efforts of these practitioners and recounting their contributions to medicine.³³

In 2005, Ira M. Rutkow published his seminal work, *Bleeding Blue and Gray: Civil War Surgery and the Evolution of American Medicine*. His study of Civil War surgery and medicine details the state of medicine throughout the war portraying both the horrors of early battlefield medicine and the advancements resulting from these initial failures. Additionally, he offered a distinctive perspective on the subject by highlighting

³⁰Robert G. Slawson, *Prologue to Change: African Americans in Medicine in the Civil War Era* (Frederick, MD: NMCWM Press, 2006): iv-vi, 1-7, 46-50.

³¹Cynthia DeHaven Pitcock, "Gunpowder, Lard and Kerosene: Civil War Medicine in the Trans-Mississippi," in *The Earth Reeled and the Trees Trembled": Civil War Arkansas, 1863-1864*, ed. Mark Christ (Little Rock, AR: Old State House Museum, 2007), 68-70.

³²Bonnie Brice Dorwart, *Death is in the Breeze: Disease During the American Civil War* (Frederick, MD: NMCWM Press, 2009), 1-5, 150-65.

³³Robert M. Bedard, "Four Connecticut Physicians: Window to Civil War Medicine and Service," *Connecticut Medicine* 73, no. 2 (2009): 87-93; John M. Trombold, "Gangrene Therapy and Antisepsis Before Lister," *The American Surgeon* 77, no. 9 (September 2011): 1138-43.

the politics behind changes in medicine.³⁴ He also considered the effect that the Civil War had on public health in the nation as a whole more than any previous author.³⁵

Historians have debated and discussed various aspects of Civil War medicine since Barnes and Brown first introduced the topic in the 1870s. Duncan, Hall, and Adams became the first authors to analyze the influence of medicine on the war effort. In the 1950s, Adams and Cunningham penned comprehensive studies on Civil War medicine, which set the standard for subsequent historians. Scholarship surged in the 1960s as authors capitalized on the renewed national interest in the conflict. After a lull essentially lasting until 1993, scholars once again began to examine the subject. Today, scholarship considering the medical aspect of the Civil War continues to surge as studies on the topic are published yearly.

Much like the examination of medicine during the conflict, analyses on the war in the West remained largely unexplored in early scholarship. Initial Civil War historians echoed the sentiments expressed by Confederate leaders, that the Trans-Mississippi theater was irrelevant. Indeed it would take the better part of a century before scholars would truly begin to wrestle with the conflict across the Mississippi, specifically in Arkansas.³⁶

³⁴Ira M. Rutkow, *Bleeding Blue and Gray: Civil War Surgery and the Evolution of American Medicine* (New York: Random House, 2005), ii-x, 3-17, 357-68. For instance, he revealed the competitive relationship between the US Sanitary Commission and the Christian Commission that led to rivalry and sabotage.

³⁵Rutkow, *Bleeding Blue and Gray*, ii-x, 3-17, 357-68.

³⁶A brief look at some of the most influential histories of the war shows a paucity of literature on the conflict in Arkansas. For more information see, Anne J. Bailey and Daniel E. Sutherland, "The History and Historians of Civil War Arkansas," *Arkansas Historical Quarterly* 58, no. 3 (Autumn 1999): 234-8. Hereafter, the *Arkansas Historical Quarterly* will be abbreviated *AHQ*.

The first study on Arkansas during the conflict came from John M. Harrell who wrote a section on the state in Clement A. Evans's multi-volume work, *Confederate Military History*, published in 1899. When the war began, Harrell joined the rebel ranks, eventually rising to the rank of colonel. Harrell spent the majority of his service in Arkansas, and at the war's end, Evans requested that he write a history of the war in that state. In his study, Harrell mainly discussed military conflicts and politics in the state. Though his work was sympathetic to the South, he maintained a surprisingly balanced tone considering his status as a Confederate veteran.³⁷

In 1923, Thomas S. Staples published his dissertation as the book *Reconstruction in Arkansas, 1862-1874*, the first true history of the war in Arkansas. Staples wrote under the guidance and direction of William Dunning, the controversial founder of the Dunning School of Reconstruction. Closely mimicking the ideologies of his mentor, Staples showed a blatant racial bias and presented a decidedly one-sided and negative view of Reconstruction in Arkansas. His study also focused solely on Reconstruction and only tangentially dealt with the war itself.³⁸ Three years later, David Y. Thomas penned *Arkansas in War and Reconstruction, 1861-1874*.³⁹ At the urging of the Arkansas Division of the United Daughters of the Confederacy, the state legislature of 1923 made appropriations for a publication detailing Arkansas's role in the war. Thomas was commissioned to produce the work. In many ways it is obvious that he wanted to satisfy

³⁷John P. Marrow, "Confederate Generals from Arkansas," *AHQ* 21, no. 3 (Autumn 1962): 232; John M. Harrell, "Confederate Arkansas," in *Confederate Military History*, ed. Clement A. Evans (Atlanta: Confederate Publishing Company, 1899).

³⁸Thomas S. Staples, *Reconstruction in Arkansas, 1862-1874* (New York: Columbia University Press, 1923).

³⁹Thomas also received his Ph.D. under William Dunning at Columbia and was a close friend of Charles Beard while studying there. Thomas Rothrock, "Dr. David Yancey Thomas," *AHQ* 27, no. 3 (Autumn 1968): 249.

his patrons as his writing parallels the pro-Southern histories of his predecessors.⁴⁰

However, as an ardent pacifist, Thomas did not portray a romantic war full of fallen heroes, but rather focused on the horrors of battle.⁴¹ Though this loss of objectivity reflects a flaw in his scholarship, his standpoint led him to investigate previously unexplored topics such as women and guerilla warfare, subjects that set the precedent for modern day studies.⁴² Together these works opened the door for further study of Arkansas during the Civil War.

Throughout the 1940s and 1950s, scholars became increasingly interested in the subject. In 1945, Fred Harvey Harrington authored an article on Arkansas's troops at Port Hudson. His study was one of the first genuinely scholarly works on Arkansans' role in the Civil War.⁴³ Another noteworthy historian, Maude Carmichael, discussed federal experiments with black labor on the abandoned plantations in occupied Arkansas.⁴⁴ Carmichael, potentially influenced by Thomas's work, focused her analysis on the social

⁴⁰David Y. Thomas, *Arkansas in War and Reconstruction, 1861-1874* (Little Rock, AR: Arkansas Division, United Daughters of the Confederacy, 1926), v. His preface notes that he used Harrell's book as a "guide" to the military aspects of the war and Staples's study as his primary resource for the discussion of Reconstruction.

⁴¹The reason for his pacifism is unclear. It could have been because his father was a Confederate veteran or because he saw the destruction that comes from war, or some combination of the two. Thomas was known for having strong, progressive opinions so his pacifism is not out of character. Rothrock, "Dr. David Yancey Thomas," 248-52, 254-7.

⁴²Thomas, *Arkansas in War and Reconstruction*, v.

⁴³Fred H. Harrington, "Arkansas Defends the Mississippi," *AHQ* 4, no. 2 (Summer 1945): 109-117.

⁴⁴Maude Carmichael, "Federal Experiments with Negro Labor on Abandoned Plantations in Arkansas: 1862-1865," *AHQ* 1, no. 2 (Summer 1942). In many ways Carmichael seems a woman born in the wrong era. She not only defied odds by being a female Ph.D., which she earned from Radcliffe College, during a time when the vast majority of women remained in the home, but she also wrote on the still relatively novel topic of the Civil War in the Trans-Mississippi. Radcliffe College, "Report of the Graduate School of Arts and Sciences," in *Reports of College Officers, 1934-1935* (Cambridge, MA: Harvard University Press, 1936), 21, accessed December 11, 2013, <http://nrs.harvard.edu/urn3:rad.arch:14990?n=21>.

consequences of the war decades before the New Social History movement would take hold in the US. Also during this time, several scholars wrote biographies of major actors in the state. Elsie Lewis detailed the life of Robert Ward Johnson, a Confederate States Senator from Arkansas. Biographers Daniel O’Flaherty, Joseph H. Parks, and Ralph Rea published works on Jo Shelby, Edmund Kirby Smith, and Sterling Price respectively.⁴⁵

Following the style of Carmichael, Harry N. Scheiber examined the common soldier in the Trans-Mississippi army in the wake of Bell Irvin Wiley’s distinguished books, *The Life of Johnny Reb* and *The Life of Billy Yank*, on the daily lives of troops in the larger armies.⁴⁶ Mary Elizabeth Massey explored the homefront in her journal article on the effect of shortages on Confederate civilians.⁴⁷ Massey grew up in Arkansas and studied under historians of the Dunning school.⁴⁸ She played a critical role in helping bring social issues, and in particular women’s roles, into the discussion of Civil War history.⁴⁹ Following Massey’s lead, Robert F. Smith and William Frank Zornow also contributed to the homefront scholarship. Smith explored the role of propaganda on

⁴⁵Elsie M. Lewis, “Robert Ward Johnson: Militant Spokesman of the Old-South-West,” *AHQ* 13, no. 1 (Spring 1954): 16-30; Daniel O’Flaherty, *General Jo Shelby: Undefeated Rebel* (Chapel Hill, NC: University of North Carolina Press, 2001); Joseph H. Parks, *General Edmund Kirby Smith, C.S.A.* (Baton Rouge, Louisiana State University Press, 1954); Ralph Rea, *Sterling Price: The Lee of the West* (Little Rock, AR: Pioneer Press, 1959).

⁴⁶Harry N. Scheiber, “The Pay for Troops and Confederate Morale in the Trans-Mississippi West,” *AHQ* 18, no. 4 (Winter 1959): 350-65; Bell Irvin Wiley, *The Life of Johnny Reb: The Common Soldier of the Confederacy* (Baton Rouge: Louisiana State University Press, 1943); Bell Irvin Wiley, *The Life of Billy Yank: Common Soldier of the Union* (Baton Rouge: Louisiana State University Press, 1952).

⁴⁷Mary Elizabeth Massey, “The Effect of Shortages on the Confederate Homefront,” *AHQ* 9, no. 3 (Autumn 1950): 172-192.

⁴⁸After completing her undergraduate degree within the state, during which time she was a student of Thomas Staples, she finished her studies at the University of North Carolina. There, she was influenced by Fletcher Green, a student of William Dunning. South Carolina Center for the Book, “Mary Elizabeth Massey,” University of South Carolina, accessed December 12, 2013, <http://faculty.libsci.sc.edu/literarymap/authors/masse.htm#biography>.

⁴⁹Massey, “The Effect of Shortages,” 172-192.

Arkansas's citizens.⁵⁰ Zornow considered the use of state aid to assist soldiers and their families.⁵¹ In 1958, Ted R. Worley published an article examining the Arkansas Peace Society and Unionist sentiment in the state. His article broke the silence surrounding Arkansas's Northern sympathizers and laid the foundations for future historians to explore the dual nature of Arkansas during the war.⁵²

Other historians discussed military operations in Arkansas; one of the most published was Ira Don Richards who produced articles on the Battles of Jenkins' Ferry, Poison Spring, and Marks' Mill.⁵³ Possibly the most notable work to be produced during this time was *The Red River Campaign: Politics and Cotton in the Civil War* by Ludwell H. Johnson. Johnson's pioneering study details the personal, political, and economic policies that played major roles in military operations in Arkansas and Louisiana during the spring of 1864. He explored both the reasons for and consequences of the expedition.⁵⁴ His work is still largely considered the definitive work on the topic. These novel

⁵⁰Robert F. Smith, "The Confederate Attempt to Counteract Union Propaganda in Arkansas, 1863-1865," *AHQ* 16, no. 1 (Spring 1957): 54-62.

⁵¹William Frank Zornow, "State Aid of Indigent Soldiers and Their Families in Arkansas, 1861-1865," *AHQ* 14, no. 2 (Summer 1955): 97-102.

⁵²Ted R. Worley, "The Arkansas Peace Society of 1861: A Study of Mountain Unionism," *AHQ* 24, no. 4 (November 1958): 445-56. Other authors to write about Union sympathizers in Arkansas were John F. Bradbury, Kenneth Barnes, and Joseph R. Bellas.

⁵³Ira Don Richards, "The Battle of Jenkins' Ferry," *AHQ* 20, no. 1 (Spring 1961): 3-16; Ira Don Richards, "The Battle of Poison Spring," *AHQ* 18, no. 4 (Winter 1959): 338-49; Ira Don Richards, "The Engagement at Marks' Mill," *AHQ* 19, no. 1 (Spring 1960): 51-60. See also: James H. Atkinson, *Forty Days of Disaster: The Story of General Frederick Steele's Expedition into Southern Arkansas, March 23 to May 3, 1864* (Little Rock, AR: Pulaski County Historical Society, 1955); James H. Atkinson, "The Action at Prairie De Ann," *AHQ* 19, no. 1 (Spring 1960): 40-50; Jack B. Scroggs and Donald E. Reynolds, "Arkansas and Vicksburg Campaign," *Civil War History* 5 (December 1959): 390-402; Walter Lee Brown, "Pea Ridge: Gettysburg of the West," *AHQ* 15, no. 1 (Spring 1956): 3-16.

⁵⁴Ludwell H. Johnson, *Red River Campaign: Politics and Cotton in the Civil War* (Baltimore: Johns Hopkins Press, 1958). Johnson received his Ph.D. in history from Johns Hopkins University, where he studied under esteemed historian and Arkansan C. Vann Woodward. Alison Freehling, "High Profile: Ludwell Johnson," *Daily Press* (Hampton Roads, Virginia), February 3, 1997, accessed December 12, 2013, http://articles.dailypress.com/1997-02-03/news/9702030046_1_civil-war-william-and-mary-battles.

studies added great value to the growing literature and challenged future authors to explore the role of Arkansas in the war.⁵⁵

Just as scholarship dealing with medicine surged during the centennial years, so too did works concerning Arkansas in the war. Throughout the 1960s, the *Arkansas Historical Quarterly* published more than fifty articles on the conflict.⁵⁶ In 1965, John L. Ferguson edited a general study of the topic. His massive work proved a valuable resource for new scholars and was unique in its broad treatment of the conflict in the state.⁵⁷ One of the most prolific writers of this decade was Edwin C. Bearss. Bearss, who remains one of the most well-known and respected Civil War historians, published more than a dozen articles on military operations in Arkansas.⁵⁸ His most recognized work on Civil War Arkansas was *Fort Smith: Little Gibraltar on the Arkansas*, but perhaps his most important contribution was his study on the role of American Indians in military

⁵⁵Three more articles of note were published during this time: Clara B. Eno, "Activities of the Women during the War Between the States," *AHQ* 3 (Spring 1944): 5-27; Edward E. Dale, "Arkansas and the Cherokees," *AHQ* 8, no. 2 (Summer 1949): 95-114; Roy A. Clifford, "The Indian Regiments in the Battle of Pea Ridge," *Chronicles of Oklahoma* 25, no. 4 (1947): 314-22; Jack A. Gunn, "Life of Ben McCulloch" (master's thesis, University of Texas, 1947).

⁵⁶For a list, see: Ryan Poe, "Civil War Bibliography," *AHQ*, [http://www.uark.edu/depts/arkhist/home/hq/articles.php?ob=id&excl\[\]=60&excl\[\]=88&excl\[\]=10&excl\[\]=13](http://www.uark.edu/depts/arkhist/home/hq/articles.php?ob=id&excl[]=60&excl[]=88&excl[]=10&excl[]=13).

⁵⁷John L. Ferguson, *Arkansas and the Civil War* (Little Rock, AR: Pioneer Press, 1965). Ferguson was born and raised in Arkansas and after receiving his Ph.D. in history from Tulane University, he moved back to the state to begin teaching. In 1960, he succeeded Ted Worley as director of the Arkansas History Commission. Russell P. Baker, "John Lewis Ferguson (1926-2006)," *Encyclopedia of Arkansas History & Culture*, accessed December 12, 2013, <http://www.encyclopediaofarkansas.net/encyclopedia/entrydetail.aspx?entryID=2900>.

⁵⁸Bearss was a historian for the Vicksburg National Military Park, eventually rising to the office of Chief Historian for the National Park Service. Upon his retirement in 1995, Bearss was given the unique title Historian Emeritus, a position created specifically to honor him. National Park Service, "Chief Historians of the National Park Service," History E-Library, accessed December 12, 2013, <http://www.nps.gov/history/history/hisnps/NPSHistory/chiefhistorians.htm>; Adam Goodheart, "35 Who Made a Difference: Ed Bearss," *Smithsonian Magazine* (November 2005).

operations in the Trans-Mississippi.⁵⁹ Numerous other military studies were produced detailing specific roles within the rebel army, including Stephen B. Oates's *Confederate Cavalry West of the River*, Alwyn Barr's "Confederate Artillery in Arkansas," James Lynn Nichols's *The Confederate Quartermaster in the Trans-Mississippi*, and multiple works by Leo E. Huff.⁶⁰ Several biographies by men like Albert Castel, who authored a preeminent account of General Sterling Price, added to the tomes during this time. Castel also penned several articles on individual battles during this time.⁶¹ Unit and local histories, too, made their way to the press as the public's infatuation with the war peaked during this time.⁶²

Following the centennial celebrations, in 1974, William R. Geise wrote his dissertation on Confederate military forces in the Trans-Mississippi. Later, he published several journal articles concerning military leadership in the region. Following the

⁵⁹Edwin C. Bearss, *Fort Smith: Little Gibraltar on the Arkansas* (Norman, OK: University of Oklahoma Press, 1969); Edwin C. Bearss, "General Cooper's C.S.A. Indians Threaten Fort Smith," *AHQ* 26 (Spring 1967): 257-84.

⁶⁰Stephen B. Oates, *Confederate Cavalry West of the River* (Austin, TX: University of Texas Press, 1961); Alwyn Barr, "Confederate Artillery in Arkansas," *AHQ* 22, no. 3 (Autumn 1963): 238-72; James Lynn Nichols, *The Confederate Quartermaster in the Trans-Mississippi* (Austin, TX: University of Texas Press, 1964). Here are some examples of Leo Huff's publications, "The Union Expedition Against Little Rock, August-September, 1863," *AHQ* 22, no. 3 (Autumn 1963): 224-37; "Guerrillas, Jayhawkers and Bushwhackers in Northern Arkansas During the Civil War," *AHQ* 24, no. 2 (Summer 1965): 127-148; "The Military Board in Confederate Arkansas," *AHQ* 26, no. 1 (Spring 1967): 75-95.

⁶¹Albert Castel, *General Sterling Price and the Civil War in the West* (Baton Rouge: Louisiana State University, 1968). Also by Castel, "Fiasco at Helena," *Civil War Times Illustrated* 7, no. 5 (August 1968): 12-17; "A New View of the Battle of Pea Ridge," *Missouri Historical Review* 62 (1968): 136-51; "Theophilus Holmes: Pallbearer of the Confederacy," *Civil War Times Illustrated* 16, no. 4 (July 1977): 11-17.

⁶²Examples of unit histories written during this time: John C. Hammock, *With Honor Untarnished: The Story of the First Arkansas Infantry Regiment, Confederate States Army* (Little Rock, AR: Pioneer Press, 1961); Wesley Thurman Leeper, *Rebels Valiant: Second Arkansas Mounted Rifles (Dismounted)*, (Little Rock, AR: Pioneer Press, 1964). Examples of local histories written during this time: Clarence Taylor, "Vignettes of the Civil War in Pine Bluff," *Jefferson County Historical Quarterly* 2, no. 1 (1963): 8-17; Boyd W. Johnson, *The Civil War in Ouachita County* (Camden, AR: Johnson's Book Store, 1968).

example of Giese, subsequent historians produced studies on military leadership in the Trans-Mississippi.⁶³ Also writing during this time was Michael B. Dougan. Dougan completed his graduate work at Emory University under distinguished historian Bell Irvin Wiley. Like his mentor, Dougan focused on the common soldier and the everyday people in his studies.⁶⁴ He ushered in a new era in Arkansas historiography as numerous writers began considering ordinary Arkansans and their roles during the war.⁶⁵ Tommy R. Thompson and LeRoy Fischer began to examine individual Southerners, and Kim Allen Scott, and Charles G. Williams studied the small-scale side of war: companies, regiments, and brigades and the men who served in them.⁶⁶

During the past twenty-five years, the Civil War in Arkansas has received more attention than ever before thanks in large part to several notable historians, namely William L. Shea, Carl H. Moneyhon, Daniel E. Sutherland, and Mark K. Christ.⁶⁷

⁶³Examples include Robert L. Kerby's evaluation of Kirby Smith and Stephen D. Engle's work on Franz Sigel at Pea Ridge Robert L. Kerby, *Kirby Smith's Confederacy: The Trans-Mississippi South, 1863-1865* (Tuscaloosa, AL: University of Alabama Press, 1972); Stephen D. Engle, "Franz Sigel at Pea Ridge," *AHQ* 50, no. 3 (Autumn 1991): 249-70. Other historians to publish works on military leadership in the west include Craig L. Symonds, Walter Brown, and Thomas Cutrer.

⁶⁴As an example, see Michael B. Dougan, "Ozark Boy in the Confederate Ranks: The Soldier Letters of W.V. Stark," *Mid-South Folklore* 6 (Summer 1978): 37-42.

⁶⁵As an example, see Michael B. Dougan, "Life in Confederate Arkansas," *AHQ* 31, no. 1 (Spring 1972): 15-35.

⁶⁶Tommy R. Thompson, "Searching for the American Dream in Arkansas: Letters of a Pioneer Family," *AHQ* 38, no. 2 (Summer 1979): 167-81; LeRoy Fischer, "David O. Dodd: Folk Hero of Confederate Arkansas," *AHQ* 37, no. 2 (Summer 1978): 130-46; Kim Allen Scott, "Witness for Prosecution: The Civil War Letter of Lieutenant George Taylor," *AHQ* 48, no. 3 (Autumn 1989): 260-71; Charles G. Williams, "The Confederate Home Guard in Southwest Arkansas," *AHQ* 49, no. 2 (Summer 1990): 168-72.

⁶⁷Other notable, current Arkansas historians include Thomas A. DeBlack and Anne J. Bailey. Thomas DeBlack's works chronicle the people, politics, and economy of Arkansas during the war and Reconstruction. Anne Bailey has written numerous articles and books on the Civil War in the Trans-Mississippi often focusing on individual military actions or officers. See Thomas A. DeBlack, *With Fire and Sword: Arkansas, 1861-1874* (Fayetteville, AR: University of Arkansas Press, 2003); Thomas A. DeBlack, "The War Within the War: The Cherokees and the Civil War in Arkansas," *Pope County Historical Quarterly* 46 (September 2012): 6-14; Anne J. Bailey and Daniel E. Sutherland, eds. *Civil War*

William Shea published his first studies in 1980 and has continued to be a strong voice in Arkansas history ever since. He has predominantly focused on individual military actions in the state, his most influential works being *Pea Ridge: Civil War Campaign in the West*, which he co-wrote with Earl J. Hess, and *Fields of Blood: The Prairie Grove Campaign*. Shea was the first historian to argue that the war in Arkansas was not simply a peripheral battleground, but rather that it played a critical role in the conflict as a whole.⁶⁸

During this same time, Carl H. Moneyhon began to publish several studies on the war in the West. Moneyhon primarily examined the impact of the conflict and Reconstruction on the state and its citizens, offering fresh, new interpretations.⁶⁹ His works attempt to portray the plight of the average Arkansan both during and after the war. In addition, he was one of the first historians to write about the impact of the federal occupation of in the northern part of the state.⁷⁰ Another prominent Arkansas historian writing during this time was Daniel Sutherland. Sutherland predominantly concentrated his works on guerilla fighting in the state and brought an unprecedented amount of

Arkansas: Beyond Battles and Leaders (Fayetteville, AR: University of Arkansas Press, 1999); Anne J. Bailey, *Between the Enemy and Texas: Parsons's Texas Cavalry in the Civil War* (Fort Worth, TX: Texas Christian University Press, 2013).

⁶⁸William L. Shea and Earl J. Hess, *Pea Ridge: Civil War Campaign in the West* (Chapel Hill, NC: University of North Carolina Press, 1992); William L. Shea, *Fields of Blood: The Prairie Grove Campaign* (Chapel Hill, NC: University of North Carolina Press, 2009). See also his numerous articles published in the *AHQ*.

⁶⁹The Department of Arkansas Heritage, "News Release: Civil War Seminar Slated by the Old State House Museum," Old State House Museum, accessed December 20, 2013, <http://www.oldstatehouse.com/userfiles/pdf/News%20Release%202012%20July%20CW%20Seminar.pdf>.

⁷⁰Carl J. Moneyhon, "The Impact of the Civil War in Arkansas: Mississippi River Plantation Counties," *AHQ* 51, no. 2 (Summer 1992): 105-17; Carl J. Moneyhon, "From Slave to Free Labor: The Federal Plantation Experiment in Arkansas," *AHQ* 53, no. 2 (Summer 1994): 137-60. Other historians to write about this topic were Clea L. Bunch and Gary W. Pecquet.

attention to this brutal side of the war.⁷¹ Mark Christ has written numerous studies on the military aspect of the war in Arkansas. Christ tends to highlight how the fighting in Arkansas fits into the conflict as a whole. His works weave together civilian anecdotes, political happenings, and military operations into a cohesive narrative of the war in Arkansas and beyond.⁷²

Together, these historians have shaped a new generation of scholars, opening the door for further exploration. From the foundations laid by Harrell, Staples, and Thomas, through the centennial surge lead by Ferguson and Bearss, to today's histories, the historiography of Civil War Arkansas has seen many changes. The scholarship has become more prolific and historians have begun considering long-ignored aspects of the conflict in the West. Still, the subject of medicine in the region has been largely neglected. To date, very little has been published on the topic. The only exceptions come from three individuals: J. Woodfin Wilson, Jr.; Cynthia DeHaven Pitcock; and Bill Gurley.⁷³

⁷¹The Department of Arkansas Heritage, "News Release: Civil War Seminar Slated by the Old State House Museum," Old State House Museum, accessed December 20, 2013, <http://www.oldstatehouse.com/userfiles/pdf/News%20Release%202012%20July%20CW%20Seminar.pdf>; Daniel E. Sutherland, "Guerrillas: The Real War in Arkansas," *AHQ* 52 (Autumn 1993): 257-85.

⁷²Some examples of Christ's works include: *Civil War Arkansas, 1863: The Battle for the State* (Norman, OK: University of Oklahoma Press, 2010); *"All Cut to Pieces and Gone to Hell": The Civil War, Race Relations, and the Battle of Poison Spring* (Little Rock, AR: August House, 2003). He also published numerous battle narratives in the *AHQ* along with several other articles on Civil War topics.

⁷³J. Woodfin Wilson, Jr. was a trained surgeon and amateur historian. He served as a surgeon in the military before retiring and returning to his home in Louisiana where he played an active role in the North Louisiana Historical Association; Obituary for J. Woodfin Wilson, Jr., M.D., *Shreveport Times*, January 29, 2014. Cynthia DeHaven Pitcock, telephone interview by author, August 29, 2013. Pitcock served as a professor of the history of medicine at the University of Arkansas for Medical Sciences (UAMS) until her retirement in 2013. Gurley is currently a professor in the pharmaceutical sciences department at UAMS. Though a pharmacist by trade, he has spent much of his free time researching and writing about the Civil War in Arkansas.

Wilson wrote an article examining the Confederate Medical Department of the Trans-Mississippi, though his study focused almost exclusively on the medical situation in Louisiana and says very little about Arkansas.⁷⁴ Together Gurley and Pitcock published the most extensive work dealing with medicine in the West, *I Acted from Principle: The Civil War Diary of Dr. William M. McPheeters, Confederate Surgeon in the Trans-Mississippi*. Though it does not deal with the issue of medicine in the state on a large-scale, the diary does offer valuable insight into the daily life of a surgeon in Arkansas.⁷⁵ One other monograph by Gurley concerns medicine in Arkansas, the edited casebook of Henry Dye. In his casebook, Dye goes to great lengths to detail his patients and their cases as he works throughout the state.⁷⁶ Both of these sources provide an invaluable first-hand account relating to medicine in the state, in addition to the meticulously researched and substantial footnotes and annotations offered by Gurley and Pitcock. Still, a more comprehensive discussion of medicine at large falls outside of their focus.

To date, the only publication to directly deal with the topic comes from a chapter entitled “Gunpowder, Lard, and Kerosene: Civil War Medicine in the Trans-Mississippi,” written by Pitcock and published in a collection of essays on Civil War Arkansas.

Though the title implies that Pitcock will deal with all of the Trans-Mississippi, the

⁷⁴J. Woodfin Wilson, Jr., “Some Aspects of Medical Services in the Trans-Mississippi Department of the Confederate States of America, 1863-1865,” *Journal of the North Louisiana Historical Association* 12 (1981): 123-146.

⁷⁵Cynthia DeHaven Pitcock and Bill J. Gurley, eds., *I Acted from Principle: The Civil War Diary of Dr. William M. McPheeters, Confederate Surgeon in the Trans-Mississippi* (Fayetteville, AR: University of Arkansas Press, 2002).

⁷⁶Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” in author’s possession.

majority of the chapter centers on medicine in Arkansas in the broad and general sense.⁷⁷

However, this discourse is only a few pages and a more extensive work is desperately needed on the subject. This study seeks to fill the void in scholarship by focusing on Confederate military medicine in Arkansas from 1863 to 1865.⁷⁸

* * *

In order to understand the medical component of the war in Arkansas, it is necessary to first explore the nature of the conflict within the state. At the war's outbreak in 1861, Arkansas was virtually a wilderness.⁷⁹ It had the smallest population and was the least developed state in the Confederacy.⁸⁰ Geographically, Arkansas is essentially divided diagonally from the northeast to the southwest. Rocky plateaus and mountains, rugged forests, and several rivers and streams dominate the landscape in north and west Arkansas. To the south and east, Arkansas boasts extensive waterways and extraordinarily rich, fertile soil.⁸¹ Most of the state was covered with thick forests and many Union soldiers who came to the area marveled at both the natural beauty and the lack of civilization. One staff officer noted that Arkansas "was very thinly settled by a

⁷⁷Cynthia DeHaven Pitcock, "Gunpowder, Lard, and Kerosene: Civil War Medicine in the Trans-Mississippi," in *"The Earth Reeled and the Trees Trembled": Civil War Arkansas, 1863-1864*, ed. Mark K. Christ (Little Rock, AR: Old State House Museum, 2007), 68-75.

⁷⁸Unfortunately, due to lacking source materials relating directly to Arkansas, this work primarily discusses Confederate military medicine and includes references to the medical situation in Arkansas as much as possible.

⁷⁹Anne J. Bailey and Daniel E. Sutherland, eds., *Civil War Arkansas: Beyond Battles and Leaders* (Fayetteville, AR: University of Arkansas Press, 2000), 97-99.

⁸⁰William L. Shea, "The Road to Pea Ridge," *AHQ* 52, no. 3 (1993): 205.

⁸¹Thomas Foti, "Geography and Geology," *The Encyclopedia of Arkansas History & Culture*, accessed January 12, 2014, <http://www.encyclopediaofarkansas.net/encyclopedia/entrydetail.aspx?entryID=401#>.

wild semi-civilized race of backwoodsmen.”⁸² Though towns had begun cropping up around the state, they were few and small. The capital of Little Rock was home to just over 3,700 residents in 1860.⁸³ The majority of the state’s citizens were rural subsistence farmers who lived off of the land. One Federal soldier described Arkansans as, “backwoodsmen, half hunter and half farmer, with seeming little industry at anything, living in rude cabins located in the narrow valleys along the creeks.”⁸⁴ Conversely, the flat lowlands of the south and east contained numerous large plantations. This region housed the majority of the state’s agricultural production and by 1860, almost 82 percent of Arkansas’s slave population.⁸⁵

This abundance of subsistence farmers and relatively small number of plantations meant that Arkansas had less of a need for slave labor. In fact, Arkansas had the fewest slaves of all Confederate states excepting Florida, and slaves made up only 26 percent of the population compared to the Southern state average of 40 percent.⁸⁶ With the least dependence on slave labor and geographically a border state, Arkansas arguably had the fewest reasons to go to war in 1861. Indeed, when the question of secession first came to the state, it was rejected. Only after President Abraham Lincoln’s call to arms did Arkansas commit to joining the Southern cause.⁸⁷

⁸²Samuel Curtis, “Army of the South-West,” *Annals of Iowa* 6 (October 1868): 266.

⁸³US Bureau of the Census, *Eighth Census of the United States, 1860: Population of the United States in 1860* (Washington, D.C.: Government Printing Office, 1864).

⁸⁴Sam Black, *A Soldier’s Recollection of the Civil War* (Minco, OK, 1912), 11.

⁸⁵James M. Woods, *Rebellion and Realignment: Arkansas’s Road to Secession* (Fayetteville, AR: University of Arkansas Press, 1987), 26.

⁸⁶These statistics were calculated using 1860 census data. The state with the most slaves was Virginia while the state with the highest proportion of slaves was South Carolina.

⁸⁷Woods, *Rebellion and Realignment*, 150-3.

Immediately following secession, thousands of volunteers rushed to the join Confederate units. Local leaders began recruiting companies from the men in their areas. Companies formed all over the state with valiant and romantic names such as the Camden Knights and the Polk County Invincibles. Their names in many ways exemplified the naivety of the boys who made up these units. Once formed, these local companies were initially charged with outfitting and equipping themselves. Local women frequently came together to make uniforms for their men. At times, area businessmen or affluent commanders provided supplies and weapons for their men, but often this was left to the volunteers themselves.⁸⁸ A member of the Fourth Arkansas Regiment noted that the men of his unit were armed with weapons from double-barreled shotguns to squirrel rifles and everything in between adding, “as to cartridge-boxes, bayonets, cap-boxes and belts, they were almost unknown to the command.”⁸⁹ Other supplies were lacking, too. Indeed, some soldiers even had to make their own tents.⁹⁰

Ill-equipped and untrained, full strength units joined other companies and headed to the city to be mustered into the state or Confederate army. These new regiments were then sent to training camps. Most of the Arkansas troops had little or no military experience and desperately needed this formal training.⁹¹ In a report to the Confederate Secretary of War on the state of affairs in Arkansas, one correspondent wrote that, “Arkansas has less the appearance of a military organization than any people I ever yet

⁸⁸Mark K. Christ, ed., *Rugged and Sublime: The Civil War in Arkansas* (Fayetteville, AR: University of Arkansas Press, 1994), 1-10.

⁸⁹W. L. Gammage, *The Camp, The Bivouac, and the Battle Field: Being a History of the Fourth Arkansas Regiment, From Its First Organization to the Present Date* (Selma, AL, 1864), 14-5.

⁹⁰Gammage, *The Camp, The Bivouac, and the Battle Field*, 15.

⁹¹Christ, *Rugged and Sublime*, 11.

knew... I never yet saw people who appeared to know so little about commander, or who seemed so utterly devoid of confidence.”⁹² Yet soon enough, some of these regiments were on their way across the Mississippi River en route for the capital at Richmond.

The Confederate capital had not always been in Richmond, Virginia. When the rebel government first convened, it did so in Montgomery, Alabama, a beautiful city in the heart of the new nation. But by the summer of 1861, the Confederate Congress decided to move to a more thriving metropolis full of industry and prestige. The transfer of the capital was the first in a series of steps that worked to isolate states in the West from the rest of the Confederacy.⁹³

This area, referred to as the Trans-Mississippi region, became a complex issue for Confederate President Jefferson Davis. The Trans-Mississippi administrative sector consisted of Missouri, Arkansas, Texas, Indian Territory (in present-day Oklahoma), most of Louisiana, and parts of present-day New Mexico, and was an attempt to consolidate seven hundred thousand square miles of territory on the far-reaching borders of the Confederacy. Understandably, the administration of such a vast region proved ghastly.⁹⁴ Separated from the rest of the Confederacy by the Mississippi River, the Trans-Mississippi region remained logistically and cognitively distant from the Southern capital and its leaders. During 1861, troops from these states were sent east to participate in what both sides thought would be one large, decisive battle that would seal the fate of the

⁹²David Hubbard to L.P. Walker, June 2, 1861, *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*, series I, vol. III (Washington, DC: Government Printing Office, 1880-1900), 589; Hereafter, this source will be referred to as *O.R.*

⁹³A Resolution to Provide for the Removal of the Seat of Government, Public Law 174, *Acts and Resolutions of the Second Session of the Provisional Congress of the Confederate States, Held at Montgomery, Ala.* (Richmond: Enquirer Book and Job Press, 1861), 88.

⁹⁴“Special Orders, No. 8,” January 10, 1862, *O.R.*, series I, vol. VIII, 734.

rebellion. But it was soon obvious that the war would not be swiftly won, and Davis and his government had to decide how to govern this territory out west.

The Trans-Mississippi had two fundamental problems. First, the region was still largely a frontier. The territory, sparsely populated by settlers, contained mostly small family farms with few of the large plantations of the Deep South. Though there were towns located throughout the region, the West did not have any city to rival Richmond or Charleston. Second, the fledgling region did not possess the wealth of many other Southern states. One striking result of this lack of capital could be seen in the shortage of railroad tracks in Texas, Louisiana, and Arkansas, which further fragmented the territory. As a result of these issues, President Davis treated the region almost exclusively as a source of supplies for the armies further east, primarily the Army of Northern Virginia. He only bothered with the Trans-Mississippi when deemed absolutely necessary, repeatedly sending the region inept commanders who were quickly replaced.⁹⁵

In September of 1861, Arkansas fell under the jurisdiction of General Albert S. Johnston's Department of the West, which included states west of the Mississippi River in addition to Tennessee, Kentucky, and a portion of Mississippi.⁹⁶ Understandably, Johnston became preoccupied with affairs in Tennessee and Kentucky so he left the Trans-Mississippi under the control of his subordinates. In Missouri, Confederate command fell to Major General Sterling Price and his ragtag group of Missouri State Guardsmen. Price and his men were desperate fighters with hopes of freeing their state from Federal control. In Arkansas, troops were under the command of Brigadier General

⁹⁵Steven E. Woodworth, "Dismembering the Confederacy: Jefferson Davis and the Trans-Mississippi West," *Military History of Texas and the Southwest* 20 (1990): 1-22.

⁹⁶Steven E. Woodworth, *Jefferson Davis and His Generals: The Failure of Confederate Command in the West* (Lawrence, KS: The University Press of Kansas, 1990), 50-1.

Benjamin McCulloch. McCulloch, an exceptional strategist and tactician, prided himself on his well-trained and well-equipped force stationed in northwest Arkansas.⁹⁷

Problems quickly arose because of the conflicting fundamental aims of Price and McCulloch. Price and his Missourians cared primarily for their state's liberation, while McCulloch had orders from Richmond to defend Arkansas and the Indian Territory from Federal invasion.⁹⁸ Disputes between the two generals became increasingly public, and by the end of 1861, Davis could no longer ignore the issue. He needed to create some new structure to bring the region under control.⁹⁹ The president established a new military district of the Trans-Mississippi and immediately began looking for a commander.¹⁰⁰ His first choice for the position was Colonel Henry Heth, but he turned Davis down. The president then turned to Major General Braxton Bragg who also declined the offer. As a third choice, Davis turned to his old friend and West Point graduate, Earl Van Dorn. Van Dorn had grand ideas of leading his forces into Missouri and capturing St. Louis.¹⁰² However, his dreams were dashed during an embarrassing defeat at the Battle of Pea Ridge in March 1862, where Van Dorn displayed complete incompetence and McCulloch was killed. Following Pea Ridge, Van Dorn moved his

⁹⁷Robert E. Shalhope, *Sterling Price: Portrait of a Southerner* (Columbia, MO: University of Missouri Press, 1971), 165-71.

⁹⁸Shea, "The Road to Pea Ridge," 209-10.

⁹⁹Shea and Hess, *Pea Ridge*, 19-20.

¹⁰⁰Shea, "The Road to Pea Ridge," 210.

¹⁰²Shea and Hess, *Pea Ridge*, 20-2.

forces across the Mississippi in order to reinforce Confederates at Shiloh. Unfortunately, his troops were too late to aid in the bloody battle.¹⁰³

Instead of returning to Arkansas after Shiloh, Van Dorn moved his men south into Mississippi. Arkansas was left unprotected and vulnerable. By May of 1862, the Governor of Arkansas, Henry Rector, was livid about the seeming abandonment of the state. Fearful of a Federal takeover, Governor Rector packed up the state archives and moved to Hot Springs.¹⁰⁴ There, he published a proclamation in the *Arkansas True Democrat* condemning Richmond for leaving Arkansas without protection and even threatening to secede if the neglect continued.¹⁰⁵ Davis was quick to chastise Van Dorn for his actions, and by the end of the month Major General Thomas C. Hindman was sent to command the District of the Trans-Mississippi in Van Dorn's absence.¹⁰⁶ Upon taking his post, Hindman remarked, "I found here almost nothing. Nearly everything of value was taken away by General Van Dorn."¹⁰⁷ The situation in Arkansas was deteriorating quickly.

Meanwhile, the Union Army of the Southwest under Brigadier General Samuel Curtis was making its way south across eastern Arkansas primarily supplying itself from the land as it did. Aware that help from Richmond was unlikely, Hindman attempted to bring control to the region, make it self-sustaining, and push Curtis out of Arkansas. In

¹⁰³Lawrence Lee Hewitt, Arthur W. Bergeron, Jr., and Thomas E. Schott, *Confederate Generals in the Trans-Mississippi* (Knoxville: University of Tennessee Press, 2013), 2-3.

¹⁰⁴Shea and Hess, *Pea Ridge*, 296.

¹⁰⁵Henry Rector, *Arkansas True Democrat*, May 8, 1862.

¹⁰⁶Gen. Thomas Hindman to Gen. Albert Pike, May 31, 1862, *O.R.*, ser. I, vol. XIII, 934; "General Orders, No. 2," August 12, 1862, *O.R.*, ser. I, vol. XIII, 876.

¹⁰⁷Gen. Thomas Hindman to Gen. S. Cooper, June 9, 1862, *O.R.*, ser. I, vol. XIII, 833.

order to do so, he declared martial law. He commandeered troops from Texas en route to Mississippi to aid in Arkansas's defense, established price controls, and began manufacturing munitions.¹⁰⁹ He urged citizens to, "burn their crops, destroy their stores of food, drive away their cattle and hogs, poison their wells, and snipe at the enemy from every side."¹¹⁰ Perhaps his most consequential decision was to organize groups of partisan rangers to conduct guerilla warfare in the state.¹¹¹

Partisan warfare in Arkansas began in full force after Hindman's endorsement of this "irregular warfare."¹¹² The practice soon became unbridled and widespread. As one Arkansas historian described the guerrilla hostilities, "This is how the Civil War was fought in Arkansas: ambushes, midnight raids, often with civilians treated as combatants and neighbors turned predators. Not a war within a war, as some historians have suggested, not even a second war, but *the* war."¹¹³ Guerillas from Missouri were already used to this type of combat as participants in the antebellum border war in Kansas. Pro-Confederate Missourians who had taken refuge in Arkansas were prime candidates for irregular companies. Arkansans, too, eagerly joined partisan bands. Those who had not enlisted in the ranks of the Southern army generally stayed behind to act as a home guard. But with the newly enacted conscription laws threatening to take these men east of the

¹⁰⁹Christ, *Rugged and Sublime*, 38-9, 42-3.

¹¹⁰Christ, *Rugged and Sublime*, 43.

¹¹¹"Reports of Major General Thomas C. Hindman," May 31-November 3, 1862, *O.R.*, ser. I, vol. XIII, 33.

¹¹²"Reports of Major General Thomas C. Hindman," May 31-November 3, 1862, *O.R.*, ser. I, vol. XIII, 33.

¹¹³Sutherland, "Guerrillas," 257.

Mississippi, many decided to take up arms in a guerrilla company.¹¹⁴ These “bushwhackers” sought to destroy wagon trains, railways, and telegraph lines, capture towns, and otherwise harass the enemy.¹¹⁵

In addition to the partisan bands commissioned by Hindman, others fought unconventional warfare in the state. Numerous Arkansas citizens were Union sympathizers and even early in the war had formed their own “jayhawking” bands to defend their property. Rebel guerillas targeted those with Northern sympathies, ordinarily the families of men who joined Arkansas regiments fighting for the Union. Further complicating the situation, in 1863 the Union army created its own “counter-guerrilla” efforts aimed at stopping Confederate bushwhackers. These irregulars routinely fought out of revenge for a prior atrocity, targeting known Southern guerrillas as well as their families and communities. At times, even those known to have Confederate sympathies were victimized.¹¹⁶ Vengeance was sought on all sides, but targets were difficult to identify since these groups had no uniforms or standard issue munitions. Chaos was the order of the day. After a series of complaints about Hindman’s controversial policies, Davis created the new Department of the Trans-Mississippi and placed Major General Theophilus Hunter Holmes at its head.¹¹⁷

Davis had little time to be too concerned over who would lead the war effort in Arkansas and the rest of the Trans-Mississippi. Holmes was an old friend and Davis

¹¹⁴Sutherland, “Guerrillas,” 260-8.

¹¹⁵“Reports of Major General Thomas C. Hindman,” May 31-November 3, 1862, *O.R.*, ser. I, vol. XIII, 33.

¹¹⁶Sutherland, “Guerrillas,” 270-81.

¹¹⁷Edwin C. Bearss, “Thomas Carmichael Hindman,” in *The Confederate General*, edited by William C. Davis (Harrisburg, PA: The National Historical Society, 1991): 108.

trusted him. That was all that he needed to know. The rebels were rapidly losing control of the Mississippi River. In April of 1862, New Orleans had been taken. That same summer, Union troops captured both Helena and Memphis, two strategic points on the Mississippi River. The Federals were closer than ever before to cutting off the Trans-Mississippi. They had control of Missouri and Kentucky and were quickly gaining ground in Tennessee, Mississippi, and Arkansas. Davis needed a commander in charge who would govern the region effectively and decisively. After all, he was too far away to be able to make decisions about affairs in the West, let alone enforce them. He was plenty busy in Richmond.¹¹⁸ According to historian William C. Davis, the Confederate president only gave the Trans-Mississippi his, “secondary attention and the secondary and even tertiary military talents available to him.”¹¹⁹

Unfortunately for those in the region, Holmes, or “Granny” as he was contemptuously called, turned out to be grossly ineffective. His appointment to the Trans-Mississippi was, as one historian described it, “the most completely incomprehensible assignment [Davis] made as president.”¹²⁰ Holmes graduated from West Point, but at the bottom of his class. An old friend of Davis’s, at the war’s outset he was appointed a brigadier general. He moved up in the ranks, though the reasons for his promotions are unclear, and by the summer of 1862, he was in charge of the District of North

¹¹⁸One source claims that the mail from Little Rock to Richmond took on average about four months, but at times took up to a year, if even at all. William C. Davis, *Jefferson Davis: The Man and His Hour* (New York: Harper Collins, 1991), 576.

¹¹⁹Davis, *Jefferson Davis*, 463.

¹²⁰Davis, *Jefferson Davis*, 410.

Carolina.¹²¹ But Holmes was dissatisfied. He complained to the president that he could not handle the small district. Despite this, Davis appointed him over the entirety of the vast Trans-Mississippi region.¹²²

And so as Arkansas entered 1863, the state was led by an incompetent commander at Little Rock, guerrilla warfare and its devastating effects ravaged the northern portion of the state, and the blood of Arkansas's fallen boys soaked the fields of places like Pea Ridge and Helena. Arkansans had already become disillusioned with the war. The governor had retreated from the capital. Union soldiers were decimating the countryside as they sought food, supplies, and revenge upon the inhabitants of the northeastern part of the state. Demoralized Missourians who had helped to defend Arkansas realized the hopelessness of winning their own state for the Confederacy. Refugees fled from Missouri and northern Arkansas seeking protection from the enemy army. Amidst this turmoil, medical professionals in the state attempted to perform their nearly impossible duties.

¹²¹Anne J. Bailey, "Theophilus Hunter Holmes," in *The Confederate General*, edited by William C. Davis (Harrisburg, PA: The National Historical Society, 1991): 116.

¹²²Davis, *Jefferson Davis*, 410.

Chapter Two

Surgeons

“As our entire army is made up of volunteers from every walk of life, so we find the surgical staff of the army composed of physicians without surgical experience. Most of those who now compose the surgical staff were general practitioners, whose country circuit gave them but little surgery, and very seldom presented a gunshot wound.”¹ So began the *Manual of Military Surgery*, a book written by J. Julian Chisolm for the use of rebel surgeons. Indeed, he espoused a truth which hindsight has confirmed: that the majority of Confederate medical practitioners were vastly unprepared for their positions. One doctor, who entered the ranks after just one year of medical school, expressed concern to his superior about his lack of surgical experience. The surgeon replied, “It is perfectly true that you know very little, but, on the other hand, you know a good deal more than [assistant surgeon] Smith.”² Though surgical novices upon joining the ranks, physicians would quickly gain valuable experience upon the battlefield.

Prior to the nineteenth century, the practice of medicine was considered a trade. Like blacksmiths or millers, practitioners learned from an established tradesman who passed his knowledge on to the apprentice through individual instruction.³ By the early 1800s, doctors sought increased professionalization through the establishment

¹J. Julian Chisolm, *A Manual of Military Surgery: For the Use of the Surgeons in the Confederate Army with an Appendix of the Rules and Regulations of the Medical Department of the Confederate Army*, 2nd edition (Richmond, VA: West & Johnson, 1862), v.

²Ira M. Rutkow, *Bleeding Blue and Gray: Civil War Surgery and the Evolution of American Medicine* (New York: Random House, 2005), 4-5.

³John S. Haller, Jr., *American Medicine in Transition, 1840-1910* (Urbana, IL: University of Illinois Press, 1981), 4.

professional societies. Licensing and regulation of physicians by these organizations encouraged formal education over apprenticeship. Medical colleges slowly began to open across the nation, although most American medical schools resided in the North.⁴ As sectional tensions increased, the South began to establish medical institutions of its own. Numerous Southern physicians, who themselves had been trained in the North, believed that the medical problems of their home states differed significantly with that of the North. Different climates meant distinctive regional diseases. For example, malaria, a prevalent killer below the Mason-Dixon line, failed to have much of an impact in Northern states. As well, Yankee colleges did not examine the medical needs of the slave population, which was important to Southern students. Because of these and other perceived regional differences, many practitioners emphasized the importance of training Southern doctors in the South.⁵

Just as demand for formal education increased, so too did the need for physicians. During the antebellum period, the population of the United States increased dramatically, causing an unprecedented need for doctors. As a result, medical schools began to proliferate quickly.⁶ Some of these institutions appeared on the campuses of well-known and respected universities, but others were independent schools of medicine called proprietary medical schools.⁷ Sadly, proprietary colleges frequently provided a mediocre education. Commonly founded and funded by well-meaning practitioners, these

⁴Cunningham, *Doctors in Gray*, 10, 13.

⁵Frank R. Freeman, *Gangrene and Glory: Medical Care During the American Civil War* (Madison, NJ: Fairleigh Dickinson University Press, 1998), 24.

⁶Cunningham, *Doctors in Gray*, 15.

⁷Cunningham, *Doctors in Gray*, 15; Gordon Dammann, *A Pictorial Encyclopedia of Civil War Medical Instruments and Equipment*, vol. III (Missoula, MT: Pictorial Histories Publishing Company, 1997), 29-31.

institutions required nothing of their students except payment; there were no entrance requirements or examinations assessing content knowledge. As one observer noted, “Like a country store which doles out inferior wares at every crossroad, a so-called ‘medical college’ is found in almost every town of generous size; and to obtain a medical degree is within the possibility, intellectual and financial, of any youth, however lacking in mental or moral fitness.”⁸ Students had to pay to attend lectures and upon completion of the designated number of lectures, they received their medical degree.

These relaxed requirements for graduation caused an unprecedented number of medical school attendees. In 1810, medical schools graduated just one hundred doctors. By 1840, this number had risen to nearly eight hundred. Just twenty years later, the number of doctors being produced had more than doubled.⁹ Most graduates of these institutions had never even seen a patient, let alone performed any type of procedure. Even with these lackadaisical requirements, the vast majority of students did not complete the necessary coursework and left school without a degree.¹⁰ Despite these problems, proprietary schools produced numerous capable physicians.¹¹

Students of medical departments affiliated with reputable universities had a better chance of receiving an adequate medical education. In order to graduate, students had to be twenty-one years old, complete two years of lectures and three years of a

⁸Emil Amberg, “The Young Physician,” *Philadelphia Medical Journal* 9 (1902): 546.

⁹Charles Donald O’Malley, ed., *A History of Medical Education: An International Symposium Held February 5-9, 1968* (Berkeley: University of California Press, 1970), 477.

¹⁰Haller, Jr., *American Medicine in Transition*, 197.

¹¹Cynthia DeHaven Pitcock, “Gunpowder, Lard, and Kerosene: Civil War Medicine in the Trans-Mississippi,” in *“The Earth Reeled and Trees Trembled”: Civil War in Arkansas, 1863-1864*, ed. Mark K. Christ (Little Rock, AR: Old State House Museum, 2007), 68.

preceptorship, and usually pass an examination.¹² Though the exit tests were quite difficult, the other requirements were far more intimidating on paper than in reality. For most colleges, the term each year only lasted sixteen weeks, and the lectures for the second year were often simply repeats from the first year.¹³ Furthermore, schools had no way of confirming that students had completed their apprenticeships other than accepting the word of their mentors. However, even without rigorous requirements, the majority of students graduated from university-affiliated medical schools adequately prepared for work as a general practitioner.¹⁴

As the need for physicians grew tremendously during the antebellum period, medical societies began revoking licensing legislation and other regulations placed upon physicians. This movement began in the South and West, societies predominated by a laissez-faire philosophy, but soon became universal.¹⁵ In fact, by the time the Civil War began, “no effective medical licensing existed in any of the states.”¹⁶ This deregulation along with the rapid increase in new institutions, led to an interesting dynamic throughout the nation. On one hand, it allowed competent doctors who, not being held back by strict oversight, to become experimenters and innovators. During this time, Southern physician Crawford Williamson Long demonstrated the use of ether as an anesthetic in operative surgery. Josiah Clark Nott, a South Carolinian, proposed that yellow fever was spread by insects, a theory well ahead of its time. Several other examples of practitioners advancing

¹²A preceptorship is another name for an apprenticeship or internship.

¹³Robert G. Slawson, “Medical Training in the United States Prior to the Civil War,” *Journal of Evidence-Based Complementary & Alternative Medicine* 17, no. 11 (2012): 14.

¹⁴Haller, Jr., *American Medicine in Transition*, 196-7.

¹⁵Cunningham, *Doctors in Gray*, 15.

¹⁶Haller, Jr., *American Medicine in Transition*, 200-1.

surgery, dentistry, aseptic technique, and other medical practices can be found throughout the antebellum South. In addition, the scientific knowledge gained at a proprietary school far outweighed the knowledge of an apprentice and was cheaper than obtaining an M.D. degree making medical education available for a larger portion of the public.¹⁷

Conversely, the ease of becoming a doctor and lack of regulations in place to hold physicians accountable for their actions produced reckless, irresponsible, inexperienced doctors. Many practitioners overused medications, failed to produce original literature, and proved altogether inept. Medical schools used European textbooks almost exclusively, as American counterparts did not exist.¹⁸ Oliver Wendell Holmes, an acclaimed author and medical reformer of the nineteenth century, expressed his disgust with the failings of certain doctors who operated with “ignorance, error, and deception.”¹⁹ Holmes feared that all of the good works and accomplishments of capable, hard-working physicians would be overshadowed incompetent practitioners. The Civil War would officially begin just a few short months later, leaving little time for either side to heed his warning.²¹

Before the outbreak of the war, the US standing army had just over one hundred physicians in its service. Upon secession of the Southern states, twenty-four of these

¹⁷Cunningham, *Doctors in Gray*, 18-20.

¹⁸Goodspeed Publishing Company, *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties, Arkansas* (Chicago: The Goodspeed Publishing Company, 1889), 484.

¹⁹Oliver Wendell Holmes, *Currents and Counter-Currents in Medical Science, With Other Addresses and Essays* (Boston: Ticknor and Fields, 1881), 53.

²¹Holmes, *Currents and Counter-Currents*, 6.

doctors joined the Confederate ranks.²² These surgeons not only had military experience and some level of guaranteed competence, but they also had to pass a screening examination to receive their commissions. But these practitioners made up only a small number of the doctors in the rebel ranks. As states began furnishing their first volunteer units, new physicians entered the ranks. Every regiment was allowed one surgeon and one assistant surgeon. At first, there were no medical assessments or qualifications for these physicians. Each unit chose their own surgeon, usually local doctor whom the men knew well.²⁴ Generally, these doctors were competent and capable.²⁵ However, few had any surgical experience, especially in frontier regions like Arkansas. Even if the opportunity would have arisen for an emergency surgery, rural doctors rarely had enough time to reach patients before it was too late. If a physician had any experience with surgery, it was probably gained during his medical education, possibly decades before the war began. Furthermore, some of the most experienced and skilled surgeons in Arkansas had joined the planter class and were either too old or exempt from participating in the war due to their slave ownership.²⁶ Other prominent, well-respected practitioners chose to serve as officers instead of surgeons.²⁷

²²Adams, *Doctors in Blue*, 4-6; H. H. Cunningham, *Field Medical Services at the Battles of Manassas (Bull Run)* (Athens, GA: University of Georgia Press, 1968), 23-4. An additional 28 surgeons joined the Confederate navy.

²⁴Rutkow, *Bleeding Blue and Gray*, 241-2.

²⁵Though most of these men were well-intentioned if not competent physicians, there is no lack of examples of men who clearly lacked the knowledge and skill required to perform their duties.

²⁶Goodspeed, *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties*, 161.

²⁷Goodspeed Publishing Company, *The Goodspeed Biographical and Historical Memoirs of Western Arkansas* (Chicago: The Southern Publishing Company, 1891), 360.

Some doctors in Arkansas, like Dr. Henry Dye, a member of Captain Alf Johnson's Texas Spy Company, were recent medical school graduates when they joined the war effort. Dye served in Arkansas beginning in 1862, just a year after his graduation from the prestigious Jefferson Medical College in Philadelphia.²⁸ Despite attending what was arguably the best medical institution in the nation at the time, Dye likely performed his first surgery after joining the Confederate military because regardless of the institution, all struggled to provide clinical experiences for their pupils. In 1849, the American Medical Association surveyed medical schools and found that less than one quarter required hospital attendance in their curriculums. The majority of students received their only clinical instruction by observing professors who would bring patients or cadavers before the class and demonstrate various surgeries or procedures.²⁹ Some of the best institutions in the nation had hospitals or clinics attached to them, yet the potential of these facilities was not fully realized. Jefferson College had its own hospital, but in 1860 announced that, "With so large a class in attendance, it is impracticable to visit the sick from bed to bed."³⁰ Instead of going to room to room diagnosing and treating each case, patients were frequently brought before the class to be examined and treated.³¹ Other times, these clinical facilities were utilized, but the large number of students meant that only those closest to the attending physician were truly able to learn.

²⁸Bill J. Gurley, "The Civil War Journal of Dr. Henry M. Dye: Texas Surgeon in the District of Arkansas," in *"The Earth Reeled and the Trees Trembled": Civil War Arkansas, 1863-1864*, ed. Mark Christ (Little Rock: Old State House Museum, 2007), 106.

²⁹O'Malley, *A History of Medical Education*, 484-5.

³⁰Jefferson Medical College, "Announcement of the Jefferson Medical College of Philadelphia: Session of 1860-61," *Jefferson Medical College Catalogs*, Paper 40: 3, accessed February 22, 2014, http://jdc.jefferson.edu/jmc_catalogs/40.

³¹Jefferson Medical College, "Announcement," 3.

Because of these difficulties, pupils commonly failed to receive adequate surgical experience, if any at all.³² Only under extremely unique circumstances did students actually practice clinical procedures or operations before graduation.³³

On the rare occasion that a physician was trained in surgery, he was often unprepared for the realities of military medicine. Recent graduates were customarily very young, in their early twenties, had trouble handling the intensity of life as a battlefield surgeon. Other surgeons, used to a practice with plenty of time for each operation, had difficulty dealing with the hundreds of wounded before them. Countless doctors expressed their dismay at the staggering number of soldiers who needed their attention and the hundreds more who they could not help. As one physician recounted after his first major battle, “War in all its terror without one redeeming trait was before you. Here the dead lay piled, yes actually piled upon each other. In another place where a deadly volley had been poured onto them, the bodies lay as regularly as if they had lain down in the ranks.”³⁴

Regardless of prior experience, doctors permitted to serve in the army were forced to learn to be military surgeons. Experienced in the field of military medicine, J. Julian Chisolm published a compendium on military surgery aimed at assisting Confederate surgeons in their endeavor to save lives. So doctors, armed with their manuals and textbooks, proceeded to the battlefield ready to take their places among those serving

³²O'Malley, *A History of Medical Education*, 485.

³³Harriet Pinson and Family Papers, 1859-1885, box 2, Special Collections, Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

³⁴F. Terry Hambrecht and Terry Reimer, eds., *Caleb Dorsey Baer: Frederick, Maryland's Confederate Surgeon* (Frederick, MD: NMCWM Press, 2013), 51.

their beloved Dixie.³⁵ In 1863, approximately eighty surgeons should have been in the state. However, this number fluctuated over time due to a number of factors.³⁶

Any physician deficient in experience had only to wait for his first battle. One surgeon recalled that during his first combat ordeal, he was at first determined to stay with his commander, “remembering that Gen. Albert Sidney Johnston probably lost his life by not having a surgeon with him.”³⁷ Yet his naivety was short-lived. He quickly realized that he would be desperately needed by the hundreds of wounded men being taken to the field hospital and spent the entirety of the battle, and well after, tending to the casualties.³⁸ Throughout the Civil War on nearly every battlefield, Confederate surgeons became overwhelmed by gunshot wounds, due in large part to advances in weaponry. The advent of the “minie ball,” a conical bullet with a hollow base, caused a drastic increase in the number and severity of casualties.³⁹ The minie ball replaced traditional rounded ammunition and allowed for the more prolific use of rifled muskets. Prior to the 1850s, the rifled musket, which had greater range and accuracy than the smoothbore musket, was only used by a select few on the battlefield. The bullets needed to be the same diameter as the gun barrel in order to take advantage of the grooves along the inside of the barrel. This meant that the bullet was particularly difficult to load and at times a mallet was needed to hammer the ramrod down the barrel, making the time between shots too lengthy to use en masse. However, the minie ball had a base which

³⁵Chisolm, *A Manual of Military Surgery*, v-vi.

³⁶Steiner, *Disease in the Civil War*, 227-8.

³⁷Pitcock and Gurley, *I Acted from Principle*, 38.

³⁸Pitcock and Gurley, *I Acted from Principle*, 38-44.

³⁹“Minie” is properly pronounced *min-aye*, but was most commonly pronounced *mini*.

expanded upon firing which meant that it could be smaller than the barrel itself, allowing for an ease of loading. By 1855, the US Army had officially adopted the rifled musket and minie ball combination.⁴⁰

Not only did the minie ball allow for better accuracy and range, which increased the number of casualties, but the bullet also inflicted more severe wounds than did the rounded bullet. When the traditional musket ball struck its target, it generally passed straight through the body. It left an exit wound not much larger than its entrance wound. It broke bones and pierced organs cleanly. Though it could be deadly, the damage inflicted by the round bullet was usually simple enough to surgically repair when it did not damage vital organs or major blood vessels. This was not so with the minie ball. This new ammunition completely shattered bones. The resulting bone fragments caused even further damage to arteries, veins, and muscle tissues. The bullet did not pass cleanly through the body, but rather ripped and shredded everything it touched. Wounds in the extremities customarily required amputation of the limb in order to preserve life. Trauma to the abdomen was considered fatal as the bowels were punctured and sepsis quickly set in. At times, chest injuries could be saved depending on the magnitude of the damage, but usually they were considered lethal.⁴¹

During the heat of the battle, medical personnel served in multiple capacities. After the disastrous aftermath of early battles in Arkansas, such as the Battle of Pea Ridge, the newly created Medical Department of the Trans-Mississippi helped to institute much needed changes in the treatment of wounded men both on and off of the battlefield.

⁴⁰McPherson, *Battle Cry of Freedom*, 473-4.

⁴¹*MSHWR*, 3(2): 695-99, 708-25; Robert M. Campbell, "Techniques of the Confederate Surgeons in the Civil War," *AORN* 8 (July 1968): 43.

Prior to the creation of the Medical Department of the Trans-Mississippi, wounded from battlefields across the state were to be moved to Little Rock. Following the Battle of Pea Ridge, hundreds of wounded were transported hundreds of miles to Little Rock, sometimes before receiving any treatment whatsoever. Countless soldiers died on the journey. Furthermore, the city had not been prepared for so many men, only a couple of buildings had been considered for hospital use. As the wounded started pouring in, the city itself turned into a hospital. Women began nursing soldiers in their homes and in hospitals, elderly men began digging graves and making coffins, and others pitched in by making food and clothing, securing hospital supplies, and doing laundry.⁴²

By 1863, members of the infirmiry corps were ordinarily the first to come to the aid of a fallen rebel. This constituted a change from early battles when the most likely person to assist a wounded soldier was his closest comrade. Though perhaps spurred to action out of loyalty to a friend, some nervous rebels helped their friends off the battlefield in order to escape the carnage he saw before him. This practice was quickly discovered and curtailed with the advent of the infirmiry corps. This medical unit consisted of the assistant surgeon and stretcher-bearers, who were often musicians, chaplains, or boys least fit for duty. During times of extreme casualties or desperation, other enlisted soldiers would be called upon to serve in the infirmiry detail as well.⁴³

On the battlefield, the infirmiry would go into the fighting with their regiment. The assistant surgeon carried first-aid supplies and some medications. Staying behind the

⁴²Cynthia DeHaven Pitcock, "Gunpowder, Lard and Kerosene: Civil War Medicine in the Trans-Mississippi," in *"The Earth Reeled and the Trees Trembled": Civil War Arkansas, 1863- 1864*, edited by Mark Christ (Little Rock, AR: Old State House Museum, 2007), 68-70; William L. Shea and Earl J. Hess, *Pea Ridge: Civil War Campaign in the West* (Chapel Hill, NC: University of North Carolina Press, 1992), 261-306.

⁴³Cunningham, *Field Medical Services*, 29-30.

lines as much as possible, it was his job to triage the wounded at a makeshift field dressing station. He approached those he could safely reach and began to treat them immediately. Meanwhile, the stretcher-bearers would move around the field of battle gathering the injured and bringing them to the assistant surgeon. These infirmiry corps members would carry one stretcher between two of them and each had a canteen of water, a tin cup, and a knapsack with very basic medical supplies. Injured soldiers who could walk, or even hobble, were bandaged, possibly given a dose of whiskey, had any fractured limbs set, and were sent towards the field hospital where the regimental surgeon awaited the first patients. Wounded who could not walk were quickly assessed. If the assistant surgeon determined that there was a possibility the soldier could be saved, then first aid was hurriedly administered, and the attendants would carry him to the field hospital for further treatment. If, however, the assistant surgeon felt that the wounded man would not survive regardless of medical intervention, generally this was true of wounds to the head, abdomen, or chest, he received a bit of liquor or opium to ease the pain and was essentially left to die. All members of the infirmiry detail had little time to spare. Time lost soothing a dying comrade could mean another man might die. Their job was to be effective, not sympathetic.⁴⁶

Though they were practical, assistant surgeons were not without emotion. They repeatedly described the horrors of war and lamented the men lost or the ones that they could not save in their diaries and letters.⁴⁷ Additionally, assistant surgeons were the ones closest to the line of battle and were in the most immediate danger of enemy fire. In

⁴⁶Cunningham, *Doctors in Gray*, 106-34.

⁴⁷Numerous diaries describe this including Baer's and McPheeters's.

1863, Dr. Caleb Dorsey Baer, an assistant surgeon in General Sterling Price's army, described working at his field dressing station when "a rifled shot passed so close to my head that I moved about 30 yards off, five minutes after, the tree by which I had been standing was rent to pieces by another shot...not less than twenty of their ten-inch shells exploded or fell within one hundred yards, we being in the centre, one burst within fifteen feet of me."⁴⁸

At the field hospital, regimental surgeons awaited the imminent influx of patients. These field hospitals were routinely housed in commandeered homes, barns, or other buildings generally about a mile from the battlefield. In choosing a location, surgeons wanted to be far enough away from the field that they and their wounded would not be in danger of enemy fire, but close enough that the stretcher-bearers could easily go between the two. They also needed a position close to a water source. If no suitable building could be found, the surgeons would set up large hospital tents. Once the place was selected supplies, medicines, and instruments were arranged in preparation for the incoming casualties. The field hospital was rarely stationary during battle. As the enemy drew near, surgeons would have to move so as not to be overtaken by the Yankees or exposed to Northern bullets. When the Confederate army advanced on the field, the hospital would need to be moved closer to the battle in order to be adequately accessible. Only after the guns and cannons ceased their firing could surgeons work with any semblance of stability.⁴⁹

⁴⁸Hambrecht and Reimer, *Caleb Dorsey Baer*, 15-6.

⁴⁹George Worthington Adams, "Confederate Medicine," *The Journal of Southern History* 6, no. 2 (May 1940): 151-66; Richard H. Shryock, "A Medical Perspective on the Civil War," *American Quarterly* 14, no. 2 (Summer 1962): 161-73.

At the beginning of the war, surgeons were supposed to serve only their own regiments, but the medical department quickly realized that this system was highly impractical and inefficient on the battlefield. First, it was difficult for each surgeon to find a separate facility in which to treat his regiment's wounded. Many times these surgeons set up tents side by side. This became confusing as soldiers were regularly delivered to the hospital unconscious or unrecognizable and attendants did not always know the companies to which they belonged. Second, depending upon the formations and duties of each regiment, some faced massive casualties while others hardly any.⁵⁰ For example, in the Battle of Pea Ridge in March 1862, one Arkansas regiment lost only five men, while the 3rd Missouri reported more than one hundred casualties.⁵¹ So by 1863, surgeons on the field gathered together, found a suitable location for a hospital, and then began working on any and all casualties that were brought to them.

Upon arrival from the battlefield, the surgeon in charge quickly assessed the wounded.⁵² Sometimes the physician could tell simply from looking if the man would require an operation, but usually the doctor would need to first probe the wound to ascertain the type and extent of the damage. In his discussion on probing wounds J. Julian Chisolm entreated surgeons to use common sense saying, "Before, however, probing the wound for the detection of foreign bodies, be quite sure that the clothing of the soldier has been perforated. The examination of the clothing will save much time to the surgeon,

⁵⁰Alfred Jay Bollet, *Civil War Medicine: Challenges and Triumphs* (Tucson, AZ: Galen Press, 2002), 77-98.

⁵¹"Report of Colonel John T. Hughes, Confederate Cavalry," *O.R.*, ser. I, vol. VIII, 314; "Report of Colonel John B. Clark, Jr.," *O.R.*, ser. I, vol. VIII, 320; "Report of Major D. H. Lonsday," *O.R.*, ser. I, vol. VIII, 322; "Report of Colonel Colton Greene," *O.R.*, ser. I, vol. VIII, 326.

⁵²The surgeon in charge was designated most often as longest commissioned officer, most often, the brigade surgeon.

and painful, protracted, injurious probing to the wounded.”⁵³ Once he determined that the injury needed to be probed, the doctor would insert his finger into the lesion and begin to remove any bullet, bone, or cloth fragments.⁵⁴ At the time, physicians saw no harm in moving from patient to patient, examining of one man after another without washing their hands and certainly without wearing any gloves. Perhaps if trying to be especially cleanly, one would wipe his hands on his bloody apron.⁵⁵

A shot to the arm or leg that did not perforate any major blood vessels and had avoided the bone, or resulted in a clean break, could potentially be sutured and bandaged without the need for surgery. If surgery was unnecessary or could be prolonged, the soldier was sent as quickly as possible to the nearest general hospital.⁵⁶ After surgery, too, patients were speedily bandaged and sent to have further treatment elsewhere if at all possible. In most cases, the surgeon could not wait to perform an operation. Experience had taught him that the longer he waited to amputate a limb, the greater risk for infection. And in a day of rampant disease and without antibiotics, an infected limb often meant death.⁵⁷ When amputations were deemed necessary, surgeons would create a makeshift surgical table, commonly a door or other piece of wood placed on top of two barrels. Without the knowledge of the importance of aseptic technique, most surgeons simply put on a butcher’s apron or a bed sheet over their uniform and wiped the blood off of his

⁵³Chisolm, *A Manual of Military Surgery*, 147-8.

⁵⁴Chisolm, *A Manual of Military Surgery*, 150.

⁵⁵Louis H. Toledo-Pereyra and Alexander Horacio Toledo, “American Civil War: Part I,” *Journal of Investigative Surgery* 17 (2004): 116.

⁵⁶In January 1863, Arkansas had a number of general hospitals in working order. Most patients would be sent to the capital at Little Rock or other locations in the southern part of the state as by this point, the Union controlled much of northern Arkansas.

⁵⁷Campbell, “Techniques of Confederate Surgeons,” 46.

instruments between operations. When numerous soldiers required an amputation, which was frequently the case, the wounded were placed on the table, sedated, and operated on within a matter of minutes. As soon as one patient was removed from the table, the next arrived, and with quick succession the surgeon would amputate limb after limb.

Gruesome scenes have been recorded describing field hospitals with piles of limbs lying on the ground next to the operating table.⁵⁸ After witnessing such sights it was no wonder that, “The common fear which depresse[ed] the soldier on the eve of a battle, more than any other, is not so much death, but the dread of mutilation.”⁵⁹

The surgeon would begin an amputation by the administration of anesthesia, usually chloroform or ether. Ether, also known as “sweet vitriol,” was discovered during the Middle Ages. In 1842, Crawford Williamson Long, a Georgia physician, became the first to use ether as a general anesthetic during a surgical procedure. However, Long did not publish his results until seven years later. Meanwhile, in Boston in 1846, dentist William T. G. Morton demonstrated the use of ether as a surgical anesthetic in a Massachusetts General Hospital amphitheater. Within six months of the Morton demonstration, ether was being used throughout the world. The US Army began using ether in surgical procedures during the Mexican War. The first known case of clinical chloroform use was by James Young Simpson in 1847, but because of ether’s surging popularity and some early deaths associated with chloroform overdose, the use of the agent during surgical procedures was slow to take off.⁶⁰

⁵⁸Adams, “Confederate Medicine,” 151-66; Shryock, “A Medical Perspective on the Civil War,” 161-73.

⁵⁹Chisolm, *A Manual of Military Surgery*, 132.

⁶⁰Maurice S. Albin, “Anesthetics during the Civil War, 1861-65,” *Pharmacy in History* 42, no. 3/4 (2000): 99-101.

Though the use of ether remained high in clinical settings, by 1860, military medicine had begun transitioning to chloroform for reasons particular to the battlefield. First, ether is a highly flammable solvent. In a clinic or hospital setting, care could be taken to avoid any sparks or flames, but on a battlefield, with cannons and guns exploding all around and surgeons operating well into the night, such avoidance was impossible. Ether also took longer to take effect, which proved deleterious when the wounded came pouring into the field hospital in such high volume, all needing immediate medical attention. Moreover, ether caused patients to go through a prolonged “excitability” phase before losing consciousness meaning that more attendants may have been needed in order to restrain the soldier than with chloroform. In addition, patients awakened more quickly after the use of chloroform and less chloroform per patient was needed to produce the desired effects.⁶²

Under ideal conditions, surgeons at the field hospital would work in pairs during complicated operations such as amputations, each relieving the other when one became fatigued.⁶³ More often than not, particularly in the neglected Trans-Mississippi, reality was far from this model situation. Instead of having a physician partner, the doctors used orderlies, hospital stewards, chaplains, musicians, and civilians to help with surgeries. Once the doctor determined that the limb must be amputated, a surgical assistant administered chloroform, or the best available equivalent, to the patient.⁶⁴ Throughout the

⁶²Albin, “Anesthetics during the Civil War,” 99-102, 106.

⁶³Chisolm, *A Manual of Military Surgery*, 140.

⁶⁴The best equivalent to chloroform was ether. If no ether was available, the patient could be injected with morphine or another opiate. If none of these were available, whiskey, brandy, or equivalent liquor was administered. It is a common misconception that Civil War surgeries were often done without any anesthesia or painkillers. Though it did happen on occasion, it was rare, even in the Trans-Mississippi.

conflict, there were a number of masks and inhalers available for the administration of chloroform, but the most common method of delivery was to pour the anesthetic onto a handkerchief or other cloth, folded into a cone and held above the patient's face until he lost consciousness.⁶⁵ By 1863, most physicians understood the rudimentary principles of dealing with anesthetics. In fact, during the entirety of the war, chloroform caused no more than a few dozen rebel deaths.⁶⁶

Once the patient had succumbed to sleep, the surgeon would begin his work, ideally with the aid of three assistants. One assistant would be in charge of compressing the main arteries nearest the trunk. Another would hold the limb and retract the flap during the operation. The third would administer the anesthesia and then help the surgeon ligate the blood vessels. The doctor would begin by applying the tourniquet after which he would commence cutting, frequently with a scalpel dulled by overuse. After carefully tying off any main blood vessels, the surgeon would remove the limb. Once removed, the bone would be smoothed so as not to later push through the tissue and skin used to cover the stump. Finally, the skin would be sewn together, though the sutures were far apart and did not close the gap completely. This was done so that pus could easily drain from the site. Upon completion, the stump would be wrapped in wet cloth and occasionally a plaster would be applied.⁶⁷ In spite of these horrific conditions, more than 70 percent of

⁶⁵Albin, "Anesthetics during the Civil War," 104.

⁶⁶*MSHWR*, 2(3): 887-898 . The actual number is unknown for the Confederate army and could quite possibly be much fewer. In J. Julian Chisolm's 1864 addition of *A Manual of Military Surgery*, he claims that only two deaths from chloroform had been reported during the war; Chisolm, *A Manual of Military Surgery*, 429.

⁶⁷Chisolm, *A Manual of Military Surgery*, 479-80, 416.

amputees survived their procedure if done within the first twenty-four hours after the injury.⁶⁸

A good surgeon could complete an operation in as little as ten minutes. During battles, the doctors would perform surgery after surgery, often well into the night and at times with only the moon to light their way.⁶⁹ As Dr. Baer, a physician who served in Arkansas, noted after the Battle of Helena in 1863, “From the time the first wounded man was brought from the field, until dark. I never sat down nor was I idle five minutes, but with my instruments in my hands went from one case to the other. Truly I am tired of blood, for two years my knife has scarcely been idle and altho’ when young I took pleasure in Surgery I have had my fill.”⁷⁰ Critics saw the piles of limbs and the screaming men and immediately labeled these surgeons as lazy, heartless butchers, but this was far from the truth. By 1863, doctors knew that time was of the essence in order to save lives. Conservative physicians tried to save limbs, but in the process they commonly forfeited the patient’s life. Instead, many doctors chose amputation over resection in most cases, though not without realizing the gravity of the situation and the extreme physical and emotional pain that came with the loss of limb.⁷¹

Working with Dr. Baer at the Battle of Helena, Dr. William McPheeters gave an excellent account of his experience in field medicine in his diary. McPheeters arose with the army at one in the morning to begin their final approach to Helena after days of

⁶⁸*MSHWR*, 2(2): 613-55, 805-6, 909-13, 991, 1017, 1021; *MSHWR*, 3(2): 53-9, 159, 334, 397-407, 460-563, 612-4, 639; Bollet, *Civil War Medicine*, 198-9.

⁶⁹Adams, “Confederate Medicine,” 161-73.

⁷⁰Hambrecht and Reimer, *Caleb Dorsey Baer*, 16, 11. Baer would certainly not be the only doctor to become disillusioned with his overwhelming task.

⁷¹See the diaries of Drs. McPheeters and Baer, as well as numerous letters written by Drs. Bragg, Cade, and others.

marching and little sleep. He described the engagement saying that once he began his work he no longer saw any of the fighting, but he could hear it all around him.

McPheeters and at least four other physicians worked tirelessly. The regiment chaplain aided the surgeons, serving as a nurse and assistant during operations. As the Confederates fell back, they set up a makeshift hospital at “Col. Polk’s.” Polk gave them complete access to his homestead and the surgeons made use of it. McPheeters retired at midnight noting that he was “tired and sick at heart” from his experience that day.⁷²

But for surgeons in the field, their work did not end with the close of the battle. In the case of a Confederate loss, regimental surgeons would retreat with their commanders taking all those who were able to travel with them. Other members of the medical staff, usually assistant surgeons, stayed behind to treat those unable to move. Medical personnel were considered non-combatants and would be pardoned by the enemy after their work was finished. On campaign in Arkansas during the summer of 1863, one Texas surgeon recalled staying awake for the next fifty hours following a battle and in fact toiled so long with the sick and wounded that he eventually collapsed.⁷³ After the Battle of Helena, surgeons stayed at the makeshift hospital for weeks to care for the injured as the army retreated. The doctors performed every kind of duty, from performing operations to making mattresses for their men.⁷⁴ When a battle ended in a victory, surgeons continued to treat the wounded rebels, but would afterwards offer their services to the physicians in blue. Following his experience after the Battle of Jenkins’ Ferry in

⁷²Pitcock and Gurley, *I Acted from Principle*, 38-9.

⁷³John Q. Anderson, *A Texas Surgeon in the C.S.A.* (Tuscaloosa, AL: Confederate Publishing Company, Inc., 1957), 58, 64.

⁷⁴Pitcock and Gurley, *I Acted from Principle*, 41-2.

April 1864, Iowa surgeon Dr. W. L. Nicholson wrote, “When the Confederate surgeons had completed their own work they came and gave us every assistance in their power and furnished instruments, medicine, dressings, and chloroform.”⁷⁵

Southern doctors faced numerous obstacles on the battlefield, particularly in Arkansas. One of the most significant issues was a lack of surgeons. Early in the war regiments chose their own surgeons when they were mustered into the army. The quota of one surgeon and one assistant surgeon per regiment was quickly filled. In fact, some doctors joined the ranks as officers, especially practitioners in the planter elite, or soldiers and not as surgeons.⁷⁶ But by 1863, more physicians were desperately needed in the Confederate army. Having two doctors on staff may have been enough when the regiment was stationary, but during a campaign, the small workforce was quickly overwhelmed. “The Surgeons allowed by law not being even sufficient to supply the wants of the Army when all are at their posts.”⁷⁷ But regiments were hardly ever fully staffed with medical professionals. With the creation of the Medical Department of the Trans-Mississippi in 1862, multiple doctors lost their positions when they could not pass the examination.⁷⁸ Surgeons who had served for a year or more sought furloughs to go home and visit their families. Others suffered from illnesses after repeated exposure to disease and many

⁷⁵William L. Nicholson, “The Engagement at Jenkin’s Ferry,” *Annals of Iowa* 9 (1914): 513.

⁷⁶One example of a physician who joined as a private was Dr. Edward W. Cade. He had gone before the board of examiners and passed his test, but was told there was no place for him as a surgeon. Cade eventually became a regimental surgeon of the 28th Texas Volunteer Cavalry; Anderson, *A Texas Surgeon in the C.S.A.*, 7, 11, 17-8. Other doctors who were leaders in their communities joined the ranks as captains or other commanding officers. Goodspeed Publishing Company, *The Goodspeed Biographical and Historical Memoirs of Western Arkansas* (Chicago: The Southern Publishing Company, 1891), 360.

⁷⁷David Fentress to wife Clara, December 10, 1862, The David W. Fentress Family Letters, 1856-1969, The Portal to Texas History Digital Collections, University of North Texas Libraries, accessed January 12, 2014, <http://texashistory.unt.edu/ark:/67531/metaph182661/m1/2/>.

⁷⁸See Anderson, *A Texas Surgeon in the C.S.A.*, 106.

eventually succumbed to their ailments. In May 1863, of the thirty-seven medical officers listed as a part of Major General John George Walker's Texas Division serving in Arkansas, eleven were reported dead. In July of that same year, thirty surgeons were listed in the report, but ten had already perished. Several other regiments in Arkansas had no regimental surgeon at all, and one battery was reported to have not a single medical officer.⁷⁹ Furthermore, some of the most experienced and capable surgeons in Arkansas were either too old or exempt from participating in the war due to their slave ownership.⁸⁰

A lack of experience also hindered the effectiveness of surgeons on the battlefield. After two years of working in the fields, doctors who had served as surgeons from the war's outbreak had become surgically more adept. However, new physicians who came in to fill the voids in the medical department did not possess the technical skills necessary for battlefield medicine. Dr. Junius Newport Bragg had graduated medical school in 1861 and almost immediately joined the 11th Arkansas as a private. Within two years, he had been appointed an assistant surgeon. He worked hard to develop his skills as a surgeon and practitioner, taking every available moment to read training manuals and medical books claiming, "I am trying to be as hard a student as I ever was.

⁷⁹"Return of Medical Officers of Maj Genl Jno. G. Walker's Division, serving in the District of Arkansas Trans-Mississippi Dep for the Month of March 1863," box 21, folder 14, Joseph Jones Papers, Howard-Tilton Memorial Library Special Collections, Tulane University, New Orleans, LA; "Return of Medical Officers in Walker's Division, Trans-Mississippi serving in the District of W. LA, July 1863" box 21, folder 14, Joseph Jones Papers, Howard-Tilton Memorial Library Special Collections, Tulane University, New Orleans, LA.

⁸⁰Goodspeed, *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties*, 161.

What I ought to know I will know, if I have mind enough to comprehend it.”⁸¹ Like his predecessors, he began ignorant, but spent his time working to develop his skills.⁸²

Likewise, battlefield medicine was made more difficult due to a lack of supplies. Early in the war, the Southern army benefitted from a lax blockade and control of the Mississippi River, but these assets did not last. By 1863, the blockade had become increasingly difficult to penetrate and during that same year, Confederates had lost strongholds along the Mississippi at Arkansas Post, Port Gibson, Port Hudson, and Vicksburg.⁸³ With the loss of the Mississippi, the western portion of the Confederacy was effectively cut off from the east. Supplies of ordinary items suddenly became extremely scarce. In July 1863, one Little Rock newspaper had to close its doors due to a lack of newsprint.⁸⁴ As one private serving in Little Rock noted, “Clothing is very scarce here as well as provisions and money and everything else that a soldier needs.”⁸⁵

For doctors, this logistical separation corresponded to a lack of surgical medicines, supplies, and instruments. The easiest way to obtain surgical necessities was by stealing or capturing Union stores. Routinely after a battle, the doctors raided captured wagons in search of better equipment, as Confederate instruments were almost always inferior to those of the Federals.⁸⁶ In a letter home, one surgeon bragged about his recent

⁸¹Mrs. T.J. Gaughan, ed., *Letters of a Confederate Surgeon, 1861-65* (Camden, AR: The Hurley Co., Inc., 1960), 109-10.

⁸²Gaughan, *Letters of a Confederate Surgeon*, 110.

⁸³McPherson, *Battle Cry of Freedom*, 380-2, 629-38; Christ, *Civil War Arkansas, 1863*, 39-87.

⁸⁴William W. O'Donnell, *The Civil War Quadrennium: A Narrative History of Day-to-Day Life in Little Rock, Arkansas During the American War Between the States, 1861-1865* (Little Rock, AR: Civil War Round Table of Arkansas, 1985), 45.

⁸⁵George W. Allen, “Civil War Letters of George W. Allen,” ed. Charleen Plumly Pollard, *The Southwestern Historical Quarterly* 83, no. 1 (July 1979): 50.

⁸⁶Cunningham, *Doctors in Gray*, 157-8.

procurement of the, “finest case of instruments I ever saw,” which he had taken from a captured Yankee wagon.⁸⁷ If not captured, the next best way to acquire supplies was by way of Texas. Necessities could be smuggled into Texas through Mexico and shipped by rail and river to Arkansas.⁸⁸ At other times, materials could be acquired by trading with the enemy, usually through third-party “cotton buyers” but occasionally face-to-face.⁸⁹ Some items were smuggled into Arkansas from across the Mississippi, most often by women and sometimes children.⁹⁰ When instruments could not be found in other ways, doctors used their own instruments or fabricated homemade versions of surgical necessities.⁹¹

When supplies could be furnished, difficulties arose in attempts to transport the materials to the army. The Mississippi River had long been the lifeblood of Arkansas’s shipping industry. Key waterways emptied into the Mississippi, allowing goods to be sent to and from nearly every region in the state. With the fall of Vicksburg and the Union control of the river, the main artery of Arkansas’s transportation industry was effectively severed. After the loss of Little Rock, the Union army also took control of the Arkansas River, the main waterway into the heart of the state.⁹²

Throughout much of the war, both armies relied on railroads to transport men and materiel. In Arkansas, this was not the case. At the war’s outset, the state contained one

⁸⁷Anderson, *A Texas Surgeon in the C.S.A.*, 101.

⁸⁸Campbell, “Techniques of Confederate Surgeons,” 44.

⁸⁹Anderson, *A Texas Surgeon in the C.S.A.*, 92.

⁹⁰Gaughan, *Letters of a Confederate Surgeon*, 246; Cynthia DeHaven Pitcock, telephone interview by author, August 29, 2013.

⁹¹Anderson, *A Texas Surgeon in the C.S.A.*, 7-10.

⁹²Christ, *Civil War Arkansas, 1863*, 3-8, 80-7.

38-mile stretch of railroad track between Hopefield, present-day West Memphis, and Madison, a small town on the St. Francis River just west of Hopefield. Little was done during the war to develop further infrastructure, and any attempts at building tracks were promptly destroyed by the enemy.⁹³ Without railroads, wagons were often needed to transport supplies. Many times these wagons were difficult to acquire, even when needed for medical reasons.⁹⁴ If one could find a wagon, utilizing the state's overland routes was a treacherous endeavor.⁹⁵ In his diary one soldier claimed that one mile in Arkansas was equal to three civilized miles.⁹⁶ Describing his trek through northwest Arkansas, Dr. Baer discovered "the road a mass of rocks of every shape and size and position... [and] is very rocky the road being filled with them and some of considerable size, the whole road across the mountain and for five miles south is rough and rocky."⁹⁷ Routes in the southern part of the state may not have been steep and rocky, but they were regularly plagued by swampy pits. Again Dr. Baer noted, "If the weather continues as it now is nothing can be done by the armies of either side until the roads either dry off or freeze hard."⁹⁸ During one campaign in Arkansas in early 1863, troops marched through mud

⁹³William D. Baker, *Historic Railroad Depots of Arkansas, 1870-1940* (Little Rock, AR: Arkansas Historic Preservation Program, 2004), 4.

⁹⁴David Fentress to wife Clara, February 26, 1865, The David W. Fentress Family Letters, 1856-1969, The Portal to Texas History Digital Collections, University of North Texas Libraries, accessed January 12, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160319/>.

⁹⁵Christ, *Rugged and Sublime*, xii.

⁹⁶Powhatan Clark, "Diary of Powhatan Clark, 1862-1863," David F. Boyd Family Papers, Special Collections, Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

⁹⁷Hambrecht and Reimer, *Caleb Dorsey Baer*, 148,150. In fact, the state's roads were so appalling to Baer that he mentions their condition nearly a dozen times in his short diary.

⁹⁸Hambrecht and Reimer, *Caleb Dorsey Baer*, 193.

ankle deep.⁹⁹ As the Federals retreated during the failed Camden Expedition, they lost hundreds of wagons and thousands of livestock in the mud filled bank where their animals had gotten stuck and wagons had sunk down to their axles.¹⁰⁰ Adding to these transportation woes was the constant threat of guerrillas and Federal pickets. By 1863, total warfare had enveloped the state in a brutal clash of partisan rangers. Each group of guerrillas worked to harass and destroy property of the enemy. This led to even more complications when trying to move supplies across the state. Not limited to attacks on land, partisans also targeted steamboats and other riverboats.¹⁰¹

When supplies did make it to their intentioned armies, complications arose because of a lack of communication between the Medical, Commissary, and Quartermaster departments. Quartermasters were in charge of the transportation of the army and its supplies. At times, the wagon train was left behind during a battle and a surgeon may not have had his necessary supplies and instruments for several days, if at all. A massive problem arose with the paltry, disorganized ambulance system. Doctors on both sides of the conflict needed an unprecedented number of wagons and ambulances to transport their wounded after a battle. The US Army eventually came up with an effective and systematic ambulance system. Unfortunately, the Confederacy never did. The ambulance system that did develop was impromptu at best. In fact, the situation was so desperate that one historian has suggested that the lack of ambulances and wagons was

⁹⁹Anderson, *A Texas Surgeon in the C.S.A.*, 34.

¹⁰⁰Thomas A. DeBlack, *With Fire and Sword: Arkansas, 1861-1874* (Fayetteville, AR: University of Arkansas Press, 2003), 116-7.

¹⁰¹Christ, *Rugged and Sublime*, 58. Sutherland, "Guerrillas in Arkansas," 280-5.

possibly the South's biggest medical problem throughout the conflict.¹⁰² In February 1865, one surgeon wrote home to his wife that he had "no ambulance nor marketing wagon," to use for his men.¹⁰³ When wagons were available, they were often of very poor quality and proved exceedingly painful for ailing patients. After riding in agony with an ambulance driver, one soldier had quite enough and pulled a pistol on the driver to get him to slow down.¹⁰⁴

Because of these numerous problems, many doctors did not wait for the government to furnish them with much needed medical supplies. When the army ran out of sponges, women in Little Rock spent time scraping lint and making bandages to be used on the battlefields.¹⁰⁵ Necessity required physicians to be creative and resourceful. Surgeons created their own instruments, reused bandages, and carefully rationed items like chloroform. When out of the silk thread traditionally used to tie off arteries during surgery, physicians used horsehair as a substitute. In order to make the hair soft and pliable, it had to first be boiled, effectively sterilizing the hair.¹⁰⁶ Furthermore, horsehair, which consists primarily of water and proteins, could easily be broken down by the body making the material ideal for internal sutures.¹⁰⁷ Dr. Hunter Holmes McGuire

¹⁰²Stewart Brooks, *Civil War Medicine* (Springfield, IL: Charles C. Thomas, 1966), 37.

¹⁰³David Fentress to wife Clara, February 26, 1865, The David W. Fentress Family Letters, 1856-1969, The Portal to Texas History Digital Collections, University of North Texas Libraries, accessed January 12, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160278/>.

¹⁰⁴Cunningham, *Doctors in Gray*, 118-121.

¹⁰⁵J.B. Harris, *Arkansas True Democrat* (Little Rock), July 18, 1862. Women also scraped cotton for lint throughout the Trans-Mississippi.

¹⁰⁶Chisolm, *A Manual of Military Surgery*, 500; Campbell, "Techniques of Confederate Surgeons," 45.

¹⁰⁷Serag-Wiessner KG, *The Pocket Guide to Suture Materials, Techniques, & Knots* (Naila, Germany: Serag-Weissner KG, 2006), 8-15.

admonished the Confederate surgeon's ingenuity saying, "The pliant bark of a tree made for him a good tourniquet; a knitting needle, with its point sharply bent, a tenaculum, and a pen-knife in his hand, a scalpel and bistoury. I have seen him break off one prong of a common table-fork, bend the point of the other prong, and with it elevate the bone in depressed fracture of the skull and save life."¹⁰⁸

As doctors worked furiously at the field hospitals, others combed the battleground searching for wounded comrades. Generally, these activities would continue for days or weeks. Dr. W. L. Gammage of the 4th Arkansas Infantry recounted how after an intense engagement, he spent twenty-five days searching for casualties, treating the wounded, and burying the dead. One major challenge they faced was figuring out how to feed all of these wounded men who were unable to be transported immediately. As Gammage recalled, "For the first day or two we had nothing to eat but the scraps of bread and meat and coffee we found in the haversacks that were left on the field."¹⁰⁹ Gammage worked to secure sustenance for the medical officers and injured soldiers. He caught wild pigs and boiled wheat, as well as solicited local citizens for their help. He and his staff worked alongside their Federal colleagues, sharing their food and supplies with one another. At one point a Federal soldier slaughtered a calf and shared the coveted fresh meat with the Confederates. Housing the disabled became another potential problem, particularly if the rebel army did not have control of the battlefield. Gammage recalled having to stay at a nearby jail when no other shelter was found.¹¹¹ Following the Battle of Jenkins' Ferry,

¹⁰⁸Hunter Holmes McGuire, "Progress of Medicine in the South," *Southern Historical Society Papers* 17 (January-December 1889): 7-8.

¹⁰⁹W. L. Gammage, *The Camp, The Bivouac, and the Battle Field: Being a History of the Fourth Arkansas Regiment, From Its First Organization to the Present Date* (Selma, AL, 1864), 26.

¹¹¹Gammage, *The Camp, The Bivouac, and the Battle Field*, 26-8.

the wounded filled a six-room house and with no other suitable location to shelter them, those who could not fit inside the home were placed on the porch, entry, stables, and smokehouses. Still, dozens more were left lying in the rain and mud as there was nowhere to house them.¹¹²

Following a battle, the carnage, suffering, and death caused immeasurable suffering for those witnesses unable to escape the grotesque scenery. Countless doctors grieved over the horrors of their work. Dr. Frank Rainey, who served in Arkansas, wrote in his reminiscences

The place of a surgeon is not a pleasant one. It was my duty to go with the soldier and care for them in some outhouse or on his hard pallet on the ground. In the Field Hospital I have listened to the cries of the 16-year-old boys as they held me by the hand and cried, "Oh, doctor, will I ever see my mother again," or the married soldier who had left wife and babies behind, looking me entreatingly in the face, would say as the tears fell from their eyes, "Doctor, is it all up with me? Will you write to the wife and babies how I died loving them."¹¹³

In a letter home, one rebel doctor serving in Arkansas mentioned his dismay at seeing "all the misery and suffering of the regiment."¹¹⁴ Writing to her sister, one Arkansan relayed her husband's words saying, "[he] gave a dreadful account of the battlefield after the fight, says he never imagined anything so heart-rending as the groans and cries [sic] of the wounded & dying, tis awful."¹¹⁵ Another private in Arkansas recalled the horror of seeing hogs and buzzards fighting over the "choice pieces" of his fallen comrades.¹¹⁶

¹¹²Nicholson, "The Engagement at Jenkin's Ferry," 513.

¹¹³Frank Rainey, "Reminiscences of Dr. Frank Rainey," in *Reminiscences of the Boys in Gray, 1861-1865*, compiled by Mamie Yearly (Dallas, TX: Wilkinson Printing Company, 1912), 627-8.

¹¹⁴Anderson, *A Texas Surgeon in the C.S.A.*, 39.

¹¹⁵Sarah M. Fountain, ed., *Sisters, Seeds, & Cedars: Rediscovering Nineteenth-Century Life Through Correspondence from Rural Arkansas and Alabama* (Conway, AR: University of Central Arkansas Press, 1995), 146.

¹¹⁶Fountain, *Sisters, Seeds, & Cedars*, 179.

For all of their hard work, many surgeons received much more criticism than praise. Indeed, they were accused of being butchers who got some kind of satisfaction by disfiguring their men. Soldiers had a terrible fear of the practitioners and periodically went to extremes in their attempts to avoid them. Some thought physicians were cowards, men too afraid of fighting on the front lines. They were called lazy, drunks, and ignoramuses. Even historians have not been kind in their representations of the Confederate surgeons. Richard Shryock claimed that they “had neither time nor inclination to cultivate solicitude or even bedside manners.”¹¹⁷ Later, Robert E. Denny contended that an inordinate number of casualties occurred needlessly and occasionally even resulted from cruelty inflicted on soldiers by the medical staff.¹¹⁸

Despite these accusations, numerous doctors were praised for their dedication and commitment to their boys. One officer noted in his diary the “imperishable glory,” owed to surgeons for their treatment of the wounded.¹¹⁹ Dr. Chisolm espoused the valor of surgeons upon the battlefield saying they “must participate in the dangers, without the stimulation of the conflict; he require[d], therefore, a double portion of courage to sustain him” during the ordeal.¹²⁰ As Reverend James McNeilly recalled

As a rule the medical staff of our army was made up of men of the highest personal character, who in ability and acquirements were up to the highest standard of that time, and who were led by intelligent patriotism to put their skill at the service of their country. They were men of tender sympathies, and of cool courage — of steady nerves and wonderful fertility of resource, in meeting the

¹¹⁷Shryock, “A Medical Perspective on the Civil War,” 168.

¹¹⁸Robert E. Denny, *Civil War Medicine: Care and Comfort of the Wounded* (New York: Sterling Publishing, 1994), 7-12, 385.

¹¹⁹Robert Patrick Bender, *Worthy of the Cause for Which They Fight: The Civil War Diary of Brigadier General Daniel Harris Reynolds, 1861-1865* (Fayetteville, AR: University of Arkansas Press, 2011), 84.

¹²⁰Chisolm, *A Manual of Military Surgery*, 133.

exigencies of their situation. They often did deeds of heroism that if done on the field in the heat of battle would have won promotion, but were passed over as every day incidents of their position.¹²¹

Surely no higher praise could have been poured out on these physicians who devoted themselves upon the battlefield in their best attempts to save the lives of their fallen men.

¹²¹James H. McNeilly, "Recollections from One, Who Though Not a Surgeon, Was With Them All the Time," *Southern Practitioner* 22, no. 9 (1900): 415.

Chapter Three

Camp and Hospital Life

Traditional considerations of the work of Confederate doctors typically end with their work on the battlefield, but surgeons were tasked with more than amputations and setting bones. Physicians spent the vast majority of their time in service working in camps or at a hospital. Surgeons detailed to a regiment usually participated in only a handful of battles. Those who served during the Red River Expedition and Price's Raid into Missouri saw a considerable amount of fighting during those campaigns, but even so, this made up a small portion of their duties. Most of their time with their regiment was spent at camp.¹ For other surgeons, hospital life consumed all of their wartime service. These surgeons did not serve in the field at all.²

Following the shots at Fort Sumter, eager boys joined the Southern cause in droves, dreaming of glory and valor. They envisioned a grand battle in which they would "whip" the Yankees and forever secure the independence of their new nation. As one Arkansas observer noted, "The fighting spirit of the people rose in frenzy. Even the women and children cried for war. In their strident tones of passion, [the men] said they would welcome a bloody grave rather than survive to see the proud foe violating their altars and their hearths, and desecrating the sacred soil of the South with their unholy

¹This information was consolidated from the accounts of Drs. Baer, Bailey, Bragg, Cade, Fentress, McPheeters, and Rainey. Also gleaned from official records and regimental histories of units stationed in Arkansas (4th Arkansas, 16th Texas, and 29th Texas Cavalry).

²Dye, "The Illustrated Casebook of Dr. Henry M. Dye." Evidence suggests that Dr. William Carson Boon, Dr. Randolph A. Brunson, and Dr. P.O. Hooper also did not serve any time in the field.

feet.”³ Southerners hastened to the call, afraid that delay would mean they would miss out on the whole affair. As they prepared to leave their communities, great ceremonies were organized during which battle flags were presented and the boys were bid farewell with money, flowers, kisses, and gifts.⁴ For numerous green recruits, “The jubilation of so many youths was intoxicating.”⁵

Their blissful optimism and youthful innocence quickly faded with the first march and experience of camp life. As the 6th Arkansas left Little Rock, one soldier recalled the proud and dignified manner in which the regiment began its first journey, but just a few hours later the realities of soldiering began to set in. “Our shoulders ached with the growing weight and hardness of the musket, our trousers galled us sorely, the straps and belts became painfully restrictive. The military erectness gave way to weary droop. Our feet were blistered, our agonies were unendurable.”⁶ Daily life, too, was different than they anticipated. “On the first view of this place, we were all delighted with the prospect,” wrote one Southerner in the Trans-Mississippi, “we were to have a nice time during our sojourn at this encampment. Two or three days, however, convinced us that the whole camp was one mass of filth and corruption without any system of decency or propriety having been inaugurated; sickness was prevailing throughout the camp; funeral processions were daily seen.”⁷

³Dorothy Stanley, ed., *The Autobiography of Sir Henry Morton Stanley* (Boston: Houghton Mifflin Company, 1909), 164-5.

⁴Wiley, *The Life of Johnny Reb*, 20-3.

⁵Stanley, *The Autobiography of Sir Henry Morton Stanley*, 166.

⁶Stanley, *The Autobiography of Sir Henry Morton Stanley*, 172-3.

⁷Arthur W. Bergeron, Jr., ed., *The Civil War Reminiscences of Major Silas T. Grisamore, C.S.A.* (Baton Rouge, Louisiana State University Press, 1993), 3.

The romanticism of the war quickly faded into the dullness of life in the military. Boys were turned into soldiers through discipline: drilling, marching, cooking, and guard duty.⁸ Amusements were considered an important part of camp life as a way to promote mental health, remove monotony, and distract men from the realities of war. Rebels were encouraged to play ball, shoot marbles, sing and play music, race, have snowball fights, and wrestle among other activities. Though playing cards was discouraged because it almost always led to gambling, it was done anyway.⁹ Writing letters to parents and sweethearts was very important and one of the first things a soldier did after arriving in a new place. A connection with home gave the boys in gray some sense of normalcy.¹⁰ Pets were allowed in camps for comfort and affection as well as to keep the boys who had become “accustomed to blood, from becoming degraded and brutal.”¹¹ However, as the war persisted, the number of pets waned as many died from starvation and because men could hardly keep them safe from starving comrades.¹²

As soon as the army left on its first campaign, the duties of the medical staff began in full force. The sole charge of the regimental surgeon while in camp was to keep the army healthy. Therefore, his primary concern involved the promotion of proper hygiene. Before encampment, the doctor was instructed to examine the ground and speak with locals about the sanitary condition of the locale. He was to supply his troops with straw bed, clean water, nutritious food, and proper clothing. When unhealthy nuisances

⁸Wiley, *The Life of Johnny Reb*, 25-7.

⁹Chisolm, *A Manual of Military Surgery*, 56-7.

¹⁰Wiley, *The Life of Johnny Reb*, 192-4.

¹¹Chisolm, *A Manual of Military Surgery*, 58.

¹²Chisolm, *A Manual of Military Surgery*, 57-8.

arose, the physician was supposed to work with the commanding officer to ensure their removal. He was also to erect a field hospital tent to be fitted with all of the amenities needed for the sick.¹³

In addition to his hygienic preparations, the regimental surgeon had daily duties. Each morning at sick call, the ill of the regiment would come before the doctor for him to diagnose and prescribe treatments for their various maladies. The assistant surgeon or surgeon's steward would then compound and administer the medications prescribed by the surgeon. If a soldier seemed too ill to make it before the physician for the sick call, the surgeon would visit him in his tent and administer to him the medications he should require. Following each morning's call, the doctor would then visit any patients in the field hospital, monitoring their progress, modifying their course of treatment, and returning men to duty as needed. The surgeon recommended soldiers for furloughs, discharges, or transfer to a general hospital. Doctors also had the unpleasant task of distinguishing between the legitimate sick and those only feigning illness. Without the advantages of today's diagnostic testing, physicians had to rely more on their patients to accurately report their symptoms. As one surgeon serving in Arkansas recalled, "Every morning I order at least 20 on duty who are pretending to be sick."¹⁴ Another described attending to a young man with a wounded hand who he believed shot himself to escape service. "Several persons whom I have seen," he said, "with the same kind of injury, for the same purpose."¹⁵ Additionally, surgeons spent a great deal of time completing

¹³Chisolm, *A Manual of Military Surgery*, 122-4.

¹⁴Anderson, *A Texas Surgeon in the C.S.A.*, 37.

¹⁵Michael Flanagan, ed., "The Memoirs of Dr. Robert J. Christie, June 17, 1831-July 27, 1909," chapter XIX, accessed December 20, 2013, <http://flanaganfamily.net/genealo/memoirs.htm#chVI>.

paperwork. Each morning he was to make a report to the commanding officer of all sick and disabled troops in the regiment. He would also file monthly and quarterly reports to superiors, keep track of supplies, make requisitions for various needs, sign certificates of death and discharge, and otherwise ensure his department's organization.¹⁶

An assistant surgeon in the camp had similar duties to that of his superior. If he had demonstrated competence, then patients would be split between he and the surgeon. Additionally, the assistant surgeon would compound and distribute medications; apply dressings; bandage limbs; keep the register, diet, and prescription books; and assist in compiling the monthly and quarterly reports. Along with the surgeon and assistant surgeon, orderlies, stewards, and nurses assisted in the care and treatment of the wounded. Medicines had to be continually stocked, rations prepared for the sick, and wounds cleaned.¹⁷

Medical personnel had few problems understanding their duties, but executing them proved an entirely different story. By far their biggest challenge came in trying to establish and promote hygienic living conditions. As per the "Regulations for the Medical Department of the C.S. Army," surgeons were instructed to "inspect camps, and urge the enforcement of stringent rules of police."¹⁸ Though he was in charge of maintaining cleanliness in camp, the surgeon had no authority over any of the men except for his subordinates in the medical corps. Sadly, most commanders had as little regard for

¹⁶Chisolm, *A Manual of Military Surgery*, 124-7.

¹⁷Chisolm, *A Manual of Military Surgery*, 129-30.

¹⁸Confederate States War Department, *Regulations for the Medical Department of the C.S. Army* (Richmond: Ritchie & Dunnivant, 1862), 9.

hygiene as the privates did and so, very little could be done to affect real change.¹⁹ As Chisolm noted, “Medical advice is seldom asked or listened to by those in command, so long as suffering and death are not cruelly felt.” Furthermore he espoused that, “An army will always be burdened with heavy mortuary lists, extensive hospital organizations, a large pay-roll, and comparatively few efficient troops, unless officers take the most lively interest in the general welfare of their men, and cease to consider professional advice offensive and intrusive.”²⁰ Dr. Junius Bragg of the 33rd Arkansas wrote to his wife that he was “disgusted” by the fact that his colonel seemed to care less about the health of his men.²¹ As one frustrated surgeon espoused, “Better health would exist I have no doubt if commanders in the field were to pay more attention to the personal cleanliness of the [men] while stationary.”²²

Without the help of superiors, doctors repeatedly had trouble getting their regiments to follow camp rules. For the young rebels, their first night away from their homes often occurred after they joined the ranks. Far away from their mothers or wives, they reveled in their newfound freedom. They picked up benign vices like belching and swearing, but soldiers also began to forego cleanliness. They stopped bathing and shaving.²³ If the men even dug latrines, they routinely failed to use them. “Sinks” as they

¹⁹Cunningham, *Doctors in Gray*, 110, 166-8.

²⁰Chisolm, *A Manual of Military Surgery*, 3, 108.

²¹Mrs. T.J. Gaughan, ed., *Letters of a Confederate Surgeon, 1861-65* (Camden, AR: Hurley, 1960), 104-5.

²²Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 79.

²³John C. Grady and Bradford K. Felmly, *Suffering to Silence: 29th Texas Cavalry, CSA, Regimental History* (Quanah, TX: Nortex Press, 1975), 20-1.

called them, reeked and many preferred to relieve themselves elsewhere.²⁴ This frequently meant in a stream or river, which was actually the preferred place to defecate in the absence of a privy, leading to further problems with impure water, which propagated the spread of disease.²⁵

Finding water free of human or animal waste became an increasingly difficult task. J. Julian Chisolm, a prominent surgeon in the Confederate army, urged the medical staff to insist on providing sanitary water saying, “Good water is even more necessary than good food, and should be obtained, at any cost, for the use of the troops.”²⁶ He even gave multiple ways to purify the water such as boiling and using charcoal, but whether by choice or necessity, this advice was generally disregarded.²⁷ In a letter home, one Texan noted, “We have had an awful time drinking the meanest water not fit for a horse (indeed I could hardly get my horse to drink it), eat up by mosquitoes and suffocated by heat.”²⁸ Camps were also filled with lice, gnats, flies, and vermin of every kind.²⁹ As one surgeon explained, “It was currently stated by our boys that the fleas were so numerous in Ark., that they kept the dust stirred up by hopping about. They were not the only human tormentors of that unfortunate commonwealth. Those pests that hide in the cracks and crannies of the bedstead, claimed a share of my blood.”³⁰ However, not every unit lived

²⁴In areas such as northwest Arkansas, digging latrines would not have been easy because of the rocky soil.

²⁵Chisolm, *A Manual of Military Surgery*, 55.

²⁶Chisolm, *A Manual of Military Surgery*, 33.

²⁷Chisolm, *A Manual of Military Surgery*, 33-4.

²⁸Anderson, *A Texas Surgeon in the C.S.A.*, 61; This letter was written from just south of the Arkansas border in northern Louisiana, but is indicative of the same.

²⁹Cunningham, *Doctors in Gray*, 169-70.

³⁰Flanagan, “The Memoirs of Dr. Robert J. Christie,” chapter XVII.

in squalor. Dr. William McPheeters, who for a time served as a medical inspector for his division, at times noted very well managed quarters. In the spring of 1863, he commented on a “healthful abode” saying that, “in fact we have rarely met with camps as well furnished with all the appliances necessary for the health and comfort of the troops.”³¹ During another inspection, he noted the regular use of the latrines, the good health of the brigade, and the beneficial arrangements of the tents.³²

Also lacking in camps were proper shelters. As early as August of 1861, soldiers complained about the shortage of blankets and rations.³³ One Arkansas regiment was forced to make their own tents when the Richmond government failed to supply any.³⁴ Many slept on a damp ground with no shelter at all. With any luck, they had a blanket to cover themselves up with.³⁵ In his casebook, Dr. Henry Dye described the effect of the elements on one group of cavalry. He recorded, “Destitute of tents, they were compelled to bivouac, during the inclement weather of December and January, upon the cold earth with no other shelter but the clouded canopy. At the same time badly supplied with

³¹William M. McPheeters and Thomas D. Wooten, “Report regarding present and proposed cantonment of Price’s Division, April 4, 1863,” in *I Acted from Principle: The Civil War Diary of Dr. William M. McPheeters, Confederate Surgeon in the Trans-Mississippi*, ed. by Cynthia DeHaven Pitcock and Bill J. Gurley (Fayetteville, AR: University of Arkansas Press, 2002), 322.

³²William M. McPheeters and Thomas D. Wooten, “Report of Inspection of Division Commanded by Maj. Gen. Price, May 18, 1863,” in *I Acted from Principle: The Civil War Diary of Dr. William M. McPheeters, Confederate Surgeon in the Trans-Mississippi*, ed. by Cynthia DeHaven Pitcock and Bill J. Gurley (Fayetteville, AR: University of Arkansas Press, 2002), 323-5.

³³Robert Patrick Bender, ed., *Worthy of the Cause for Which They Fight: The Civil War Diary of Brigadier General Daniel Harris Reynolds, 1861-1865* (Fayetteville, AR: University of Arkansas Press, 2011), 24.

³⁴Gammage, *The Camp, The Bivouac, and the Battle Field*, 15; Gaughan, *Letters of a Confederate Surgeon*, 204.

³⁵Grady and Felmlly, *Suffering to Silence*, 21.

blankets averaging about one to every 3 men.”³⁶ When discussing his shelter during marches, one officer in the state recalled that for a period of at least three months he did not spend a single night under a roof, instead sleeping “in the open air every night, rain or snow.”³⁷ During a winter at Camp Bragg (near Camden, AR) due to a scarcity of tools, it took one brigade eight weeks to build suitable quarters, finishing their work in mid-December after the brutal winter had already begun.³⁸ In addition to a dearth of tents for the soldiers, the Trans-Mississippi surgeons desperately needed hospital tents and ambulances for the transport of sick and wounded.³⁹ In spite of these challenges, doctors worked tirelessly with their staffs to care for the men of their regiment, and at times overcame the numerous obstacles before them.

Though the majority of doctors served as a regimental surgeons or assistant surgeons, some physicians were needed to attend to the patients in hospitals. In the Trans-Mississippi this consisted entirely of general hospitals.⁴⁰ A practitioner at a general hospital was not attached to a specific unit, but rather attended to any soldier who came through the doors of his infirmary. Surgeons in the West coveted the positions at these general hospitals. Doctors there were under less pressure and did not have to endure the hardships of marches, enemy fire, and camp life. They also experienced more variety in

³⁶Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 4-5.

³⁷Donal J. Stanton, Goodwin F. Berquist, and Paul C. Bowers, eds., *The Civil War Reminiscences of General M. Jeff Thompson* (Dayton, OH: Morningside, 1988), 265.

³⁸E.W. Herndon to Col. S.P. Burns, *O.R.*, ser. 1, vol. XXII, part ii, 1126.

³⁹McPheeters and Wooten, “Report of Inspection of Division Commanded by Maj. Gen. Price, May 18, 1863,” 324-5.

⁴⁰J. Woodfin Wilson, “Some Aspects of Medical Services in the Trans-Mississippi Department of the Confederate States of America, 1863-1865,” *Journal of the North Louisiana Historical Association* 12 (1981): 126.

their medical cases. But perhaps the most pressing reason why a physician wished to be stationed in a hospital was because the stability of working in a hospital meant a possibility of having his family near.⁴¹ Wanting so badly to see his family, when Dr. Edward W. Cade was repeatedly denied a hospital post, he eventually resigned his commission and moved back to Texas.⁴²

Throughout much of the South, new structures were being erected for these hospitals in place of buildings that had been commandeered for this purpose and used during the first two years of the conflict.⁴³ In Arkansas, this was not the case. The army had neither the time nor the resources to construct such buildings. Instead, hospitals were housed in colleges, hotels, churches, and homes. At the war's end, Dr. Joseph Jones made a list of the "principal" hospitals in the Confederacy; not one listed was located west of the Mississippi River.⁴⁴ By 1863, only four general hospitals had been sanctioned by the rebel government in the entire Trans-Mississippi and just one in Arkansas, at Little Rock.⁴⁵

Without the aid of Richmond, Arkansans learned to become self-reliant. In early 1862, Little Rock had essentially turned itself into one large hospital. Dozens of buildings were offered to the army for use as hospitals and nearly every citizen in the city

⁴¹Wilson, "Some Aspects of Medical Services," 131.

⁴²Anderson, *A Texas Surgeon in the C.S.A.*, 107.

⁴³Chisolm, *A Manual of Military Surgery*, 64.

⁴⁴Joseph Jones, "List of Principle Hospitals," box 21, folder 4, Joseph Jones Papers, Special Collections, Howard-Tilton Memorial Library, Tulane University, New Orleans, LA.

⁴⁵Robert L. Kerby, *Kirby Smith's Confederacy: The Trans-Mississippi South, 1863-1865* (New York: Columbia University Press, 1972), 87.

volunteered to help the wounded.⁴⁶ In February 1863, Dr. Junius Bragg was sent to Little Rock, charged with converting the Episcopal church into a hospital. Upon arrival he noted that, “There are a great many sick here; all the buildings in town, suitable for the purpose are hospitals.”⁴⁷ When needed, citizens nursed sick and wounded Southerners in their own homes.⁴⁸ Women served as laundresses, cooks, nurses, and seamstresses, while elderly men worked as gravediggers and stretcher-bearers. Amputated limbs and dead bodies could be found on the streets, and “virtually every man, woman, and child had suffered the shock of unsightly mangled bodies.”⁴⁹ The city ended up having to purchase additional land to use for burial ground when the cemeteries were filled.⁵⁰ At its height in early 1863, Little Rock housed over 2500 sick and wounded in its nine hospitals. By June of that year, only three hospitals remained open due to a lack of supplies and a healthier army.⁵¹ Just a few months later the city was evacuated due to the expectation of federal advances.⁵²

In large general hospitals, such as the one at St. John’s College in Little Rock, a team of medical personnel managed daily operations. The senior medical officer at the institution served as the surgeon-in-chief of the hospital. He was in charge of distributing the patients under his care amongst the division surgeons, enforcing all hospital

⁴⁶William W. O’Donnell, *The Civil War Quadrennium: A Narrative History of Day-to-Day Life in Little Rock, Arkansas During the American War Between the States, 1861-1865* (Little Rock: Civil War Round Table of Arkansas, 1985), 33-4.

⁴⁷Gaughan, *Letters of a Confederate Surgeon*, 112.

⁴⁸“Hospitals,” *Arkansas True Democrat*, April 10, 1862.

⁴⁹O’Donnell, *The Civil War Quadrennium*, 33.

⁵⁰O’Donnell, *The Civil War Quadrennium*, 35.

⁵¹Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 3-4.

⁵²Gaughan, *Letters of a Confederate Surgeon*, 180; Kerby, *Kirby Smith’s Confederacy*, 224-33.

regulations, approving all furloughs or discharges, and managing the hospital fund.

Primarily his duties were administrative. The division surgeons took responsibility for a ward in the hospital. Each ensured that all rules and regulations were being followed in his division and supervised the activities of the assistant surgeons beneath him.

Assignments for the division surgeon, like the surgeon-in-chief, were largely managerial in nature.⁵³

Assistant surgeons worked under the supervision of their division surgeon. At St. John's Hospital each division surgeon had four assistants under his command.⁵⁴ The assistant surgeons were in charge of the daily care of the patients. They visited the infirm at least twice daily, more if required, prescribed both medications and diet, and recommended patients for discharge or furlough. The assistant surgeon wrote both daily and weekly reports to his division surgeon. In addition to these duties, each day one assistant surgeon would be detailed as an "officer of the day" and would be available all day and night for the needs of any patient.⁵⁵ Each hospital also had clerks, stewards, orderlies, and nurses who assisted the medical officers in the care of the patients, filled prescriptions, and made detailed notes in the hospital book.⁵⁶ General hospitals had wardmasters who were in charge of keeping the hospital clean. Regulations regarding the cleanliness of hospitals, both the facility and the patients, were extremely strict. For example, privies were to be scrubbed every morning and following each use and beds

⁵³Chisolm, *A Manual of Military Surgery*, 66-8.

⁵⁴Anderson, *A Texas Surgeon in the C.S.A.*, 24.

⁵⁵Chisolm, *A Manual of Military Surgery*, 68-9. This practice proved a precursor to the modern-day "call" of doctors at hospitals.

⁵⁶Confederate States War Department, *Regulations for the Medical Department of the C.S. Army*, 8-9; Anderson, *A Texas Surgeon in the C.S.A.*, 24.

made as soon as patients left them, even if gone for only a few minutes. Other members of the hospital staff served as cooks, laundresses, and guards.⁵⁷

Though medical staff diligently strove to adhere to these guidelines, Arkansas's hospitals periodically fell below the standard mandated by Confederate regulation. In fact, one of these institutions was described as "little better than hog pens."⁵⁸ In a letter home, a surgeon recalled "legions of 'little animals' infecting the hospital [where he was stationed]."⁵⁹ Even when the hospitals were well-run and efficient they frequently tended to be foul places, stinking of disease and death. These institutions got a particularly negative reputation among the enlisted men. Some even resisted reporting their illnesses due to a fear that they would go to the hospital and never return.⁶⁰ One soldier remembered that, "Day after day my company steadily diminished; and every morning I had to see them carried in their blankets to the hospital, whence none ever returned."⁶¹ It seems even a few doctors were reluctant to send their men to the general hospital. Writing to General Sterling Price in the spring of 1863, Drs. Thomas Wooten and William McPheeters noted that, "There seems to be some hesitation on the part of the regimental surgeons in sending their seriously sick to the general hospital. It is therefore respectfully suggested that an order covering these cases might have a salutary effect."⁶²

⁵⁷Chisolm, *A Manual of Military Surgery*, 69-78, 87.

⁵⁸Anne J. Bailey and Daniel E. Sutherland, eds., *Civil War Arkansas: Beyond Battles and Leaders* (Fayetteville, AR: University of Arkansas Press, 2000), 26.

⁵⁹Gaughan, *Letters of a Confederate Surgeon*, 116.

⁶⁰Bobby Roberts and Carl Moneyhon, *Portraits of Conflict: A Photographic History of Arkansas in the Civil War* (Fayetteville, AR: University of Arkansas Press, 1987), 148.

⁶¹Stanley, *The Autobiography of Sir Henry Morton Stanley*, 209.

⁶²McPheeters and Wooten, "Report of Inspection of Division Commanded by Maj. Gen. Price, May 18, 1863," 325.

The hospitals were full of three types of patients: sick, wounded, and convalescents. Recovering soldiers were routinely kept separately from the infected patients. This was done both to avoid overcrowding and to keep them from breathing the “noxious airs” thought to spread disease. Many were also given furlough to recover at home, which further reduced the hospital population.⁶³ However, commonly, these convalescing patients were detailed to nursing duties until they could return to their units.⁶⁴

After battles, scores of patients would be brought to the hospital, most often by ambulance wagon. Unlike the Union army, the South never created an effective system of transporting their wounded, especially in Arkansas where ambulance wagons tended to be scarce and railroads virtually nonexistent. At times, surgeons were given permission to take any available wagon and use it to transport the dying, but even then, sometimes there were shortages.⁶⁵ On multiple occasions, sick and wounded were left behind during a retreat for want of transportation.⁶⁶ Upon arriving at the hospital, soldiers were treated for a variety of problems, usually gunshot wounds and recent amputations. There, assistant surgeons and other hospital staff would carefully change their bandages, record their progress, and watch for fever, which was a sign of infection. The sick received similar treatment. When space allowed, patients with unusual or contagious illnesses would be

⁶³Chisolm, *A Manual of Military Surgery*, 88, 125.

⁶⁴Cunningham, *Doctors in Gray*, 74-8.

⁶⁵David Fentress to wife Clara, February 26, 1865, The David W. Fentress Family Letters, 1856-1969, The Portal to Texas History Digital Collections, University of North Texas Libraries, accessed January 12, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160278/>; Cynthia DeHaven Pitcock and Bill J. Gurley, eds., *I Acted from Principle: The Civil War Diary of Dr. William M. McPheeters, Confederate Surgeon in the Trans-Mississippi* (Fayetteville, AR: University of Arkansas Press, 2002), 330.

⁶⁶Stanton, Berquist, and Bowers, eds., *The Civil War Reminiscences of General M. Jeff Thompson*, 266.

moved outside of the hospital buildings and placed in outdoor tents. Segregation helped stop the spread of particularly contagious diseases.⁶⁷

Women also came to the hospital, attending and ministering to the infirm. They strove to ensure the comfort of the dying soldiers as they selflessly gave of themselves to caring for men who they did not even know. These ladies cooked for and fed the patients, washed their faces and brows, gave them water to drink, and did all that they could to make them comfortable. Women would write letters home, sing, pray, read, or whatever else the patients required, endeavoring all the time to “make the hospital as much like home as possible.”⁶⁸ One Texas officer gave his thanks saying, “Could I give in detail an account of the many acts of kindness which the ladies of Little Rock have shown us, I would do so, but, being impossible, suffice it to say that the ladies have attended in person, soothed the cares of the sick and consoled the dying soldier in his expiring moments.”⁶⁹

Despite the best efforts of these hardworking men and women, rebel hospitals had a number of problems beginning with the Confederate Congress, as legislators did not adequately equip the hospitals to deal with the devastating number of casualties. In fact, they were given very little in the way of funding and supplies for operation, with only \$75,000 being appropriated for the “medical and hospital departments” in March 1861.⁷⁰ Later that same year, the Provisional Congress delegated a mere \$50,000 to establish and

⁶⁷Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 24, 40-55.

⁶⁸“Hospital Association,” *Washington (Arkansas) Telegraph* June 4, 1862.

⁶⁹G.W. Daniel, letter to the editor, *Arkansas True Democrat*, February 20, 1862.

⁷⁰An Act Making Appropriations for the Support of the Regular Army of the Confederate States of America for Twelve Months, and for Other Purposes, Public Law 63, *Acts and Resolutions of the First Session of the Provisional Congress of the Confederate States, Held at Montgomery, Ala.* (Richmond: Enquirer Book and Job Press, 1861), 92.

support military hospitals.⁷¹ Like much of the fledgling nation, the Provisional Congress had not foreseen the massive number of casualties that the war would produce. Neither army had been prepared to treat so many sick and wounded. When they realized that the conflict would not be over in just a few months, the Federal army began to stockpile supplies from overseas and through manufacturing. The Confederate government tried to import necessary provisions, but as the blockade strengthened this became more challenging. Moreover, Southern manufacturing began the war far behind its Northern counterpart, and it became increasingly difficult to operate new facilities with Federals destroying factories at every opportunity.⁷²

In addition to a lack of funding, the Trans-Mississippi also suffered as Richmond failed to provide an adequate number of medical purveyors and hospital inspectors. The medical purveyors were in charge of purchasing and distributing all medical supplies to surgeons in the field and to hospitals in the region they served.⁷³ In April 1862, of the more than thirty medical purveyors serving in the South, only four were listed in the entire Trans-Mississippi theater and just one was stationed in Arkansas. Three new medical purveyors were added by the end of 1864, but it was still not enough to keep such a large region adequately supplied.⁷⁴ Even worse, the Confederate government

⁷¹An Act Making Appropriations for Military Hospitals, Public Law 32, *Statutes at Large of the Provisional Government of the Confederate States of America*, James M. Matthews, ed. (Richmond: R.M. Smith, 1864), 187.

⁷²Cunningham, *Doctors in Gray*, 134. Kerby, *Kirby Smith's Confederacy*, 72-4.

⁷³Confederate States War Department, *Regulations for the Medical Department of the C.S. Army*, 6-7, 27.

⁷⁴Wilson, "Some Aspects of Civil War Medicine in the Trans-Mississippi," 127.

failed to provide any medical or hospital inspectors; thirteen others were spread out throughout the eastern Confederacy.⁷⁵

By the time that General Edmund Kirby Smith took control of the Trans-Mississippi Department in early 1863, President Jefferson Davis told him to make his department self-sufficient, as provisions would no longer be furnished by Richmond.⁷⁶ Without supplies from the capital, the new medical director for the Trans-Mississippi Medical Department, James M. Keller, appealed to the women of the region to furnish linens, cotton, lint, and bandages as there was “no other means of procuring a sufficiency.”⁷⁷ In April 1864, Dr. William Carson Boon reported a huge shortage of hospital supplies.⁷⁸ Along with medical equipment, pharmaceuticals, and surgical supplies, hospitals also lacked beds, bedding, and other basic necessities.⁷⁹ Paper became so rare and hospital forms so few that Dr. Randolph Brunson, a post surgeon in Pine Bluff in 1863, used a US hospital document for an official report. He simply crossed out the word “United” and wrote in “Confederate.”⁸⁰ Resources became so pitiful in Little Rock that gravediggers were told to remove bandages from the dead before interment to

⁷⁵“Official List of the Chief Medical Officers, Hospitals, and Laboratories, and Armies of the Southern Confederacy, During the War of 1861-1865,” box 21, folder 4, Joseph Jones Papers, Howard-Tilton Memorial Library Special Collections, Tulane University, New Orleans, LA.

⁷⁶Bailey and Sutherland, *Civil War Arkansas*, 91.

⁷⁷James M. Keller, “To the Mothers and Daughters of Arkansas, Louisiana, and Texas,” *Arkansas True Democrat*, June 19, 1862.

⁷⁸US War Department, *Compiled Service Records of Confederate General and Staff Officers and Nonregimental Enlisted Men*, National Archives and Records Administration, Washington, D.C., 1961, Microfilm 331, Record Group 109, Roll 27, William Carson Boon (hereafter cited as *CSR-Confederate Officers and Nonregimental*).

⁷⁹Cunningham, *Doctors in Gray*, 158.

⁸⁰*CSR-Confederate Officers and Nonregimental*, Roll 37, Randolph A. Brunson.

be washed and reused.⁸¹ Because of these deficiencies, Southern doctors learned to be resourceful and to improvise when necessary. In many ways, this adaptability to their circumstance created more talented and adept practitioners.⁸²

Surgeons in Arkansas also had a particularly difficult time treating patients because of the impermanent nature of their hospitals. General hospitals were intended to be constructed at long-term locations and offer stability to both patients and doctors. Elsewhere in the Confederacy, and even within the Trans-Mississippi, general hospitals did remain quite stable, but not in Arkansas. Prior to 1863, the only general hospital was in Little Rock. But in September of that year, the Union army captured the capital after a series of victories in the eastern portion of the state. Over the next year and a half, the two armies battled for control of Arkansas. Union troops tried to rid the state of the rebels in early 1864, but their failed Camden Expedition only emboldened the Southern army and forced the Yankees to retreat back to Little Rock. In the latter part of that year, General Sterling Price organized a raid into Missouri during which time his men moved throughout the entirety of the state.⁸³ These operations, with territory being gained and lost so regularly, made establishing permanent hospitals difficult. With the constant movement of patients from hospital to hospital and the frequent capture of sick and wounded, doctors had a dreadful time trying to keep patients' medical history straight. At one point, Dr. Dye expressed frustration after coming to a hospital in Tulip and finding that nothing at all had been recorded about the surgical cases in his ward. Even when

⁸¹Pitcock, "Gunpowder, Lard and Kerosene," 67.

⁸²Cunningham, *Doctors in Gray*, 230.

⁸³Christ, *Rugged and Sublime*, 105-61.

hospitals were not overrun, patients were transferred constantly from hospital to hospital within the state.⁸⁴

In addition, hospitals had numerous sewage and water problems. Temporary hospitals rarely had effective sewage systems as they were erected so quickly and for a short amount of time. More permanent hospitals, however, would almost always eventually have sewage backup causing serious issues for the facility and its patients. Moreover, finding clean water proved a difficult task and many institutions simply looked for somewhat clear water that did not smell awful. Hospitals also had trouble with fires due to the high volume of ether housed in dried out wooden buildings that used candles to light the rooms.⁸⁵ Dr. Cade experienced this problem first hand when his field hospital burned down; he lost some money and his pants in the process.⁸⁶

Sustenance became an issue in both hospitals and in the field. Doctors were required to obtain rations for the patients under their care, but this was not always easily done.⁸⁷ Though desperately needed by ailing patients, nutritious food was even more difficult to find. Early in the war, military rations were ordinarily supplemented with generous handouts from local citizens.⁸⁸ In a letter to her sister, Clara Dunlap boasted of the numerous neighbors in Ouachita County who had agreed to donate half of their crops

⁸⁴Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 16, 20-5, 45, 64, 75.

⁸⁵Stewart Brooks, *Civil War Medicine* (Springfield, IL: Charles C. Thomas, 1966), 48-9.

⁸⁶Anderson, *A Texas Surgeon in the C.S.A.*, 81.

⁸⁷Procuring rations is mentioned by McPheeters and Bragg. Pitcock and Gurley, *I Acted from Principle*, 103; Gaughan, *Letters of a Confederate Surgeon*, 109.

⁸⁸"Our Hospitals," *Arkansas True Democrat*, April 24, 1862.

to the Confederacy.⁸⁹ But as Arkansas fell increasingly into the hands of the Union army and total warfare ravaged the state, these provisions became less and less frequent.⁹⁰ In 1864, Dunlap again wrote to her sister. Instead of bragging about the aid given to the rebels, she told of the Federals invading her home and taking all of her “foodstuffs, mules, soap, candles, coffee” as well as everything else of use.⁹¹ While Union troops targeted pro-Southern families, guerrilla bands regularly raided the homes of those who may have been spared by the Yankees because of their Northern sympathies.⁹² Both armies destroyed food crops to keep them out of the hands of the enemy, especially in western Arkansas.⁹³ A Northern private recalled finding sheep on one planter’s land. After the owner begged for the Yankee not to take them, he replied, “Who ever heard of a soldier disappointing his palate for the whim of a Johnny Reb?”⁹⁴

Without provisions from Arkansas farms, troops constantly battled hunger. During one western campaign, soldiers were so famished that when they realized the Federals had fled their encampment leaving breakfast still cooking, the boys in gray stopped to gobble down some hardtack and coffee instead of pursuing the enemy.⁹⁵ Fruits and vegetables were particularly hard to come by, as one member of a Texas regiment

⁸⁹Sarah M. Fountain, ed., *Sisters, Seeds, & Cedars: Rediscovering Nineteenth-Century Life Through Correspondence from Rural Arkansas and Alabama* (Conway, AR: University of Central Arkansas Press, 1995), 114.

⁹⁰DeBlack, *With Fire and Sword*, 57-8; Kerby, *Kirby Smith’s Confederacy*, 78-9, 266, 281-85.

⁹¹Fountain, *Sisters, Seeds, & Cedars*, 155.

⁹²Sutherland, “Guerrillas in Arkansas,” 262-8.

⁹³Kerby, *Kirby Smith’s Confederacy*, 87.

⁹⁴“Account of the Red River Expedition to Shreveport and Back,” n.d., Special Collections, Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

⁹⁵Anderson, *A Texas Surgeon in the C.S.A.*, 53.

noted, "I have not tasted vegetables twice this year."⁹⁶ One surgeon wrote home, "You cannot exactly fry eggs in the sunshine because there are none here, but the pond water we drink gets so hot in the shade that it will almost blister one's tongue."⁹⁷ A Federal surgeon serving in Arkansas noted that by the summer of 1864 the state was so desolate that when marching, he and his men subsisted off of crackers alone.⁹⁸ Starvation was not an uncommon cause of death. Dr. Henry Dye specifically noted a case of death due to starvation during his brief time at a hospital in Tulip, Arkansas.¹⁰⁰ General M. Jeff Thompson, who served in Arkansas, described one expedition he endured as "a repetition and succession of starvation and hardships." At one point his troops went for ten days without food. The boys became so hungry they ate rancid horse and mule meat and tree bark. Even the officers had trouble securing any rations.¹⁰¹ Another soldier recalled that, "Wharf rats were plentiful and large, and numbers of the men killed and ate them."¹⁰² When food was available, surgeons had to depend upon the Commissary and Quartermaster Departments to get the food to the camp or hospital. Coordination between these divisions and the Medical Department was exhausting and often ineffective.¹⁰³

⁹⁶Anderson, *A Texas Surgeon in the C.S.A.*, 108. Dr. Fentress also comments on the lack of fruits and vegetables a letter to his wife; David Fentress to wife Clara, August 30, 1864, The David W. Fentress Family Letters, 1856-1969, The Portal to Texas History Digital Collections, University of North Texas Libraries, accessed January 12, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160274/m1/1/>.

⁹⁷Gaughan, *Letters of a Confederate Surgeon*, 145.

⁹⁸William L. Nicholson, "The Engagement at Jenkin's Ferry," *Annals of Iowa* 9 (1914): 506.

¹⁰⁰Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 62.

¹⁰¹Stanton, Berquist, and Bowers, *The Civil War Reminiscences of General M. Jeff Thompson*, 266, 267.

¹⁰²T. Lindsay Baker, ed., *Confederate Guerrilla: The Civil War Memoir of Joseph M. Bailey* (Fayetteville, AR: University of Arkansas Press, 2007), 28.

¹⁰³Cunningham, *Doctors in Gray*, 159-61.

Soldiers also suffered from want of clothing, particularly after the loss of the Mississippi River in 1863. Letters home frequently requested new clothes. Descriptions of troops in Arkansas depict a ragtag group of men in mismatched, threadbare tatters. “A more brigandish set of Anglo-Saxon forces has never been collected. Here would be a fellow dressed in homespun pants, with the knees out of them; on his head might be the remnant of a straw hat. His neighbor, very likely, was arrayed in breeches made of some cast-off blanket. Our very looks bred good humor; for there was something irresistibly ludicrous in the appearance of each man,” remembered one private.¹⁰⁴

But they were more than ludicrous; their lack of clothing made them woefully unprepared for the reality of military life. Men had to wait months for uniforms to arrive, if they arrived at all. In November 1864, one observer claimed he had “never seen so many soldiers without shoes.”¹⁰⁶ Doctors in the state were known to have treated cases of frostbite due to exposure.¹⁰⁷ At Cane Hill in northwest Arkansas during the brutal winter of 1863-1864, one rebel described his situation, “It was very cold, and the snow fell several inches deep, and I had on the same summer clothes... they literally in rags, I was nearly frozen, and had burned all of the lower parts of my pants off, warming at camp fires.”¹⁰⁸ As patients began to fill the beds of his newly established hospital in February 1863, Dr. Bragg noticed that they were in “wretched condition” lacking basic garments. He immediately petitioned the medical purveyor, who did nothing to help him. He told

¹⁰⁴Joseph P. Blessington, *The Campaigns of Walker's Texas Division* (New York: Lange, Little & Co., 1875), 115.

¹⁰⁶Letter to Harriet from A.R.C., November 12, 1864, Israel L. Adams and Family Papers, Special Collections, Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

¹⁰⁷Anderson, *A Texas Surgeon in the C.S.A.*, 34, 57.

¹⁰⁸Stanton, Berquist, and Bowers, *The Civil War Reminiscences of General M. Jeff Thompson*, 264-5.

Dr. Bragg that he had no clothing and could not get any. Exasperated, the doctor went to the head of the Clothing Bureau declaring, “A government too poor to clothe its soldiers, when worn down with diseases, could not succeed; and that if it was too stingy to clothe them, it ought not to succeed.”¹⁰⁹ For some men, government attire never came. It was not uncommon for a man to travel home to get more clothing for himself and his company made by the women in the community.¹¹⁰

In addition to their military duties, surgeons in both camps and hospitals frequently treated civilians in need. The majority of physicians throughout the state had joined the war effort, leaving their communities without a doctor. When citizens in these communities became ill, they commonly sought the help of a nearby surgeon. Writing home to his wife, one doctor described marching through town and citizens flocking to him “as if I could heal them by simply touching them.”¹¹¹ Confederate physicians in Arkansas noted treating local citizens as well as slaves. In his casebook, Dr. Dye recorded the particulars of his “negro” cases right alongside the cases of whites and in just as much detail. He even followed up with his civilian patients for months after he treated them.¹¹² Similarly, doctors treated sick family members of superior officers who were traveling with their husbands or fathers.¹¹³ At general hospitals, the surgeons’ duties

¹⁰⁹Gaughan, *Letters of a Confederate Surgeon*, 116.

¹¹⁰David Fentress to wife Clara, August 4, 1863, accessed February 8, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160331/>; David Fentress to wife Clara, September 4, 1863, accessed February 8, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160259/>.

¹¹¹Gaughan, *Letters of a Confederate Surgeon*, 166.

¹¹²Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 56-7, 73-4. For another example of physicians treating blacks see: Gaughan, *Letters of a Confederate Surgeon*, 156.

¹¹³Anderson, *A Texas Surgeon in the C.S.A.*, 84.

also included participation in an examining board, hearing cases of soldiers seeking furloughs and discharges.¹¹⁴ They were difficult affairs. Doctors had to listen to the heart wrenching pleas made by countless invalid and handicapped soldiers. As a member of an examining board, one surgeon admitted, “I am afraid I do not always go strictly by the regulations in [furlough] cases but I cannot withstand it to see the poor emaciated men suffering such mental anxiety about a return to their families and steel my heart against their entreaties.”¹¹⁵

Surgeons were also encouraged to further develop their skills whenever time allowed. Dr. Chisolm espoused the creation of medical societies within the army where men could hold meetings to recount experiences with different diseases and injuries and the successes and failures of their course of treatment. Moreover, he advocated the use of cadavers for practicing operations.¹¹⁶ All across the South, physicians gathered together to erect dissecting huts and form medical societies.¹¹⁷ One such organization began in the winter camp of General Price’s division while in southern Arkansas. Calling themselves the Army Medical Association, these doctors presented papers, exchanged ideas, and gave demonstrations.¹¹⁸ When the opportunity arose, the society used animal and human bodies for detailed anatomical study and surgical training.¹¹⁹ After a successful hunting

¹¹⁴Chisolm, *A Manual of Military Surgery*, 67; 60,

¹¹⁵Anderson, *A Texas Surgeon in the C.S.A.*, 39.

¹¹⁶Chisolm, *A Manual of Military Surgery*, 130-1.

¹¹⁷Cunningham, *Doctors in Gray*, 112.

¹¹⁸At times they refer to themselves as the Army Medical and Surgical Association. The group had about 12-15 members. Pitcock and Gurley, *I Acted from Principle*, 94, 113.

¹¹⁹Pitcock and Gurley, *I Acted from Principle*, 97; Flanagan, “The Memoirs of Dr. Robert J. Christie, chapter XVI.

trip, one surgeon removed, dissected, and studied the liver of his kill.¹²⁰ Another doctor recalled curious eyes peeping through the cracks of a log hut that he and his colleagues used for “dissecting and operating” on cadavers.¹²¹

Though not all doctors formed such societies, numerous physicians did seek to improve themselves through personal study. In his diary, Dr. McPheeters mentioned on multiple occasions “reading physiology” and other scientific texts.¹²² Dr. Bragg would routinely wake up two hours before sick call to study medical books and would continue reading them when he had breaks throughout his day for he “[did] not wish for a moment to be a bogus M.D.”¹²³ In January 1864, the Confederate government, under Surgeon General Samuel Preston Moore, began publishing the *Confederate States Medical & Surgical Journal*. This publication, designed to “be the impartial representative of the profession, by collecting and elaborating the valuable results of its labors,” provided case studies and statistics drawn from doctors throughout the Confederacy.¹²⁴ Physicians routinely recorded detailed notes on their cases so that they could discover the efficacy of medical treatments and to later be able to share their knowledge with others. Dr. Pinson, an assistant surgeon in General Price’s division, kept a little notebook in which he wrote down prescriptions, orders, notes to himself, and even little encouraging poems perhaps

¹²⁰Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 55-6.

¹²¹Flanagan, “The Memoirs of Dr. Robert J. Christie,” chapter XVI.

¹²²Pitcock and Gurley, *I Acted from Principle*, 96.

¹²³Gaughan, *Letters of a Confederate Surgeon*, 109.

¹²⁴Office of the Confederate States Surgeon General, “Circular: Confederate States Medical and Surgical Journal Prospectus,” October 31, 1863, Richmond, Virginia; Samuel Preston Moore, ed., *The Confederate States Medical and Surgical Journal*, 2 vols. (Richmond: Office of the Surgeon General, 1864-5).

used to embolden his spirit.¹²⁵ Possibly the most well-known physician of the war, Dr. Joseph Jones made meticulous notes on his patients, often several times per day.¹²⁶ Dr. Henry Dye not only recorded the details of his patients, but he also performed experiments to ascertain the best treatments for certain ailments. For example, at one point Dye had a patient who presented with a fever, and after treatment with medication his fever subsided. Later, the fever came back, but this time, the doctor gave him nothing. Once again, the patient recovered. Dye therefore deduced that this type of fever required no treatment. In order to discover if his treatments worked long-term, Dr. Dye was known even to check on his patients after they were furloughed to see how they had recovered.¹²⁷

For the surgeon, the day did not end with the playing of taps. Doctors were awoken all throughout the night to come to the aid of their ailing comrades whether in the hospital or in the field. As one weary surgeon reported, “So night and day I am busy and it is exhausting me.”¹²⁸ Yet these physicians persevered, determined to do their best to help their fellow man. Writing to his wife explaining why he must stay with the army, one surgeon lamented

Could they see men marching all day through the broiling sun with the thermometer over hundred, carrying a load of forty pounds and suffering the intense thirst that is caused by heat, dust, and perspiration and no water to drink for hours at a time and when night comes camped upon some stream with water *thick* with insects and warm as water can be made by the sun and eat their supper of corn bread & beef. I have seen a hundred fall upon the ground incapable of

¹²⁵Harriet Pinson and Family Papers, 1859-1885, box 2, Special Collections, Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

¹²⁶Joseph Jones, “Morning Medical Reports,” box 2, Joseph Jones Papers, Special Collections, Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

¹²⁷Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 57-8.

¹²⁸Anderson, *A Texas Surgeon in the C.S.A.*, 51.

moving hand or foot completely exhausted from heat on a hot days march. I could stand all of this readily but it is the mental suffering, the separation from the dearest objects of life that makes [me] so willing to sacrifice all to be with them.¹²⁹

Though clearly not all surgeons were so blameless, indeed Dr. Bragg mentioned that some of the surgeons at St. John's were drunks, there are countless examples of doctors who devoted themselves to their profession.¹³⁰

¹²⁹Anderson, *A Texas Surgeon in the C.S.A.*, 69.

¹³⁰Gaughan, *Letters of a Confederate Surgeon*, 128.

Chapter Four

Disease and Medication

At the war's outbreak in 1861, the state of medicine in the United States remained exceedingly primitive by today's standards. The experiments of Louis Pasteur and Robert Koch had yet to firmly establish the germ theory of disease, which stated that microorganisms invade a host and cause infection, and not until 1867 did Joseph Lister promote the use of antiseptics during surgery and in wound care. These advances completely revolutionized the field of medicine, leading to a series of profound and incredible developments over the next several decades and laying the foundation for modern medical practice. However, for Confederate soldiers, these prodigious advances came just a few years too late.¹

Prior to the acceptance of germ theory, doctors operated under different assumptions about diseases and how they spread. In general, antebellum America believed in two main types of diseases: constitutional and miasmatic.² Constitutional diseases were a product of the humoral theory of medicine, which proposed that the body was composed of four essential humors: blood, phlegm, black bile, and yellow bile. According to this theory, an improper balance of these substances resulted in sickness. In order to treat such disorders, physicians employed "heroic" medicine: bleeding, purging, blistering, stimulants, and other seemingly barbaric measures used to restore the patient's

¹Fielding H. Garrison, *An Introduction to the History of Medicine* (Philadelphia: W.B. Saunders, 1929), 101, 576-7, 582; Joseph Lister, "On the Antiseptic Principle in the Practice of Surgery," *British Medical Journal* 2 (September 1867): 246-8.

²Joseph K. Barnes, ed., *The Medical and Surgical History of the War of the Rebellion (1861-65)* (Washington: Government Printing Office, 1870), 1(1): xix; Hereafter cited as *MSHWR*.

humors back to their natural balance.³ Doctors also knew that environmental factors could cause infections. To explain how diseases could spread from person to person, the miasmatic theory arose. Proponents of miasmatism believed that pollution, or miasmas, caused illnesses, and that these noxious fumes arose from decomposing matter with a foul or offensive smell. Persons exposed to these miasmas, especially for extended periods of time, were likely to contract a variety of diseases.⁴ For example, during this time mainstream medical thought endorsed the idea that malaria, which comes from the same root word as miasma and means “bad airs,” came from the poisonous vapors that arose from swamplands.⁵

Throughout the war, Arkansas saw more than its fair share of disease. In fact, in his monograph *Disease in the Civil War*, historian Paul E. Steiner devoted an entire chapter to discussing sickness and infection in the state. In regiments throughout Arkansas, microbes reduced the number of able-bodied soldiers by more than half every year.⁶ A private writing home from near Little Rock lamented, “It looks disheartening to look at our Regiment now; when we first arrived here we had 384 men able for duty and now we have 200 and half of them is not able to go ten miles on a force march. Great

³John S. Haller, Jr., *American Medicine in Transition, 1840-1910* (Urbana, IL: University of Illinois Press, 1981), 4, 19-25.

⁴Stewart Brooks, *Civil War Medicine* (Springfield, IL: Charles C. Thomas, 1966), 48, 77; Alfred J. Bollet, *Civil War Medicine: Challenges and Triumphs* (Galen Press, Ltd.: Tuscon, AZ, 2002), 17, 50-5.

⁵Bell Irvin Wiley, *The Life of Johnny Reb The Common Soldier of the Confederacy* (Baton Rouge: Louisiana State University Press, 1943), 249.

⁶Paul E. Steiner, *Disease in the Civil War: Natural Biological Warfare in 1861-1865* (Springfield, IL: Charles C. Thomas, 1968), 213-233.

many of our boys have died and I fear a great many more will die before we get away from here.”⁷

This experience was typical throughout the Confederacy, particularly during the early days of the conflict. Within the first few weeks in camps, rebel units experienced widespread outbreaks of communicable diseases like measles, typhoid fever, and smallpox.⁸ Measles is a viral respiratory infection spread via airborne transmission and is incredibly contagious. In fact, 90 percent of people in close contact with an infected person will develop the disease. The illness was so ubiquitous among green troops that in some places men were not detailed to duty until after they had been “put through the measles.”⁹ Though it did not have a high mortality rate, measles frequently caused secondary complications like pneumonia and diarrhea or exacerbated previous infections like tuberculosis.¹⁰

Typhoid fever and smallpox also appeared in Southern camps early in the war. Typhoid is caused by bacteria and primarily spreads via the fecal-oral route, being transmitted through contaminated water or food. Carriers for typhoid fever continue to shed the bacteria in their excrements long after they no longer feel sick making them capable of infecting others for months or years after symptoms resolve. Diagnosing

⁷George W. Allen, “Civil War Letters of George W. Allen,” ed. Charleen Plumly Pollard, *The Southwestern Historical Quarterly* 83, no. 1 (July 1979): 49.

⁸Bollet, *Civil War Medicine*, 269-76, 290-1.

⁹M. Lovell to Secretary of War J.P. Benjamin, January 28, 1862, *O.R.*, ser. 1, vol. VI, 817.

¹⁰Horace Herndon Cunningham, *Doctors in Gray: The Confederate Medical Service* (Baton Rouge: Louisiana State University Press, 1958), 188-90; Centers for Disease Control and Prevention, “Measles (Rubeola),” accessed February 10, 2014, <http://www.cdc.gov/measles/about/overview.html>; Margaret Hunt, “Virology Chapter Fourteen: Measles (Rubeola) and Mumps Viruses,” University of South Carolina School of Medicine accessed February 10, 2014, <http://pathmicro.med.sc.edu/mhunt/mump-meas.htm>. Hereafter Centers for Disease Control and Prevention will be listed as CDC.

typhoid was particularly difficult as several of its symptoms, such as fever, chills, and headache, are common to a multitude of infectious diseases.¹¹ Though exceedingly deadly, typhoid was less prevalent than many other diseases, and incidences tended to decrease in a seasoned army.¹² Smallpox, caused by the variola virus, is known by its characteristic rash and sores. During the Civil War, infected soldiers transmitted the virus primarily through prolonged, face-to-face contact with others. Unlike typhoid fever, the sick person was only contagious during an active infection. However, the smallpox virus could survive for a considerable period of time on objects like bedding and clothing if not properly disinfected, making messmates of smallpox patients particularly vulnerable to infection.¹³ Arkansas physicians took smallpox very seriously. It seems that protocol for a smallpox outbreak included isolation of the infected, placing messmates under quarantine, and vaccinating the other soldiers, all of which helped to stop the spread of the virulent disease.¹⁴ By 1863, most armies had been through these initial “camp diseases” and survivors had built up a sufficient immunity to resist succumbing to the illness upon further exposure.¹⁵

¹¹Other symptoms of typhoid fever include: constipation, malaise, and myalgia. CDC, “Typhoid Fever,” accessed February 11, 2014, http://www.cdc.gov/nczved/divisions/dfbmd/diseases/typhoid_fever/technical.html.

¹²Wiley, *The Life of Johnny Reb*, 253.

¹³CDC, “Smallpox Fact Sheet,” accessed February 10, 2014, <http://www.cdc.gov/agent/smallpox/overview/disease-facts.asp>.

¹⁴Cynthia DeHaven Pitcock and Bill J. Gurley, eds. *I Acted from Principle: The Civil War Diary of Dr. William M. McPheeters, Confederate Surgeon in the Trans-Mississippi* (Fayetteville, AR: University of Arkansas Press, 2002), 324.

¹⁵W. L. Gammage, *The Camp, The Bivouac, and the Battle Field: Being a History of the Fourth Arkansas Regiment, From Its First Organization to the Present Date* (Selma, AL, 1864), 16-7; It should be noted that outbreaks of these diseases in the last two years of war were infrequent, but still present. Usually, this was the result of green soldiers entering the ranks or the consolidation of regiments that had lost their numerical strength.

Without question, the most common complaint of the boys in both blue and gray concerned the state of his bowels. In fact, diarrhea and dysentery, sometimes referred to as “the fluxes,” were so widespread that the *Medical and Surgical History of the Rebellion* devoted one of only three volumes on medical history to the subject.¹⁶ Possible causes of these intestinal illnesses ranged from infectious pathogens to alcohol abuse, and from stress to a poor diet. Often diarrhea resulted as a side effect from other prescribed medication.¹⁷ The fluxes plagued men on both sides throughout the conflict causing both mild symptoms, like frequent bowel movements, to severe complications, such as dehydration and even death. If the cause of the diarrhea was microbial, the infection ordinarily spread quickly via the fecal-oral route. Additionally, the recurrent and enduring nature of these maladies effectively weakened patients’ immune systems making them susceptible secondary infections.¹⁸

Though diarrhea and dysentery were the most prevalent illnesses in the Confederate army as a whole, in Arkansas malarial infections became just as, if not more, commonplace.¹⁹ Malaria is caused by parasites infecting patients through a mosquito vector.²⁰ Stagnant waters, particularly in southern Arkansas, harbored these mosquitoes and allowed the disease to become rampant.²¹ The illness was so pervasive in Helena that after Union forces occupied the town, some boys referred to the place as “Hell-in-

¹⁶*MSHWR*, 1(2).

¹⁷Cunningham, *Doctors in Gray*, 185-8; Brooks, *Civil War Medicine*, 114-7.

¹⁸Cunningham, *Doctors in Gray*, 185-6.

¹⁹Steiner, *Disease in the Civil War*, 217-9.

²⁰CDC, “Malaria,” accessed February 11, 2014, <http://www.cdc.gov/malaria/about/disease.html>.

²¹Steiner, *Disease in the Civil War*, 217-9; Anderson, *A Texas Soldier in the C.S.A.*, 67-8; Gaughan, *Letters of a Confederate Surgeon*, 145-7, 156;

Arkansas.”²² Malaria reportedly killed an estimated 10 percent of troops within the first month after the Northern occupation of the town and probably infected most men stationed there.²³ Symptoms of malaria ranged from nonexistent to extremely serious, though the classical presentation of the illness consisted of three stages: the cold phase in which the patient would feel chills; the hot phase of fever, headaches, and vomiting; and the sweating phase of tiredness and profuse sweating.²⁴

Rheumatism, another ailment that plagued rebels in Arkansas, was characterized by stiff, painful joints. Though the symptoms could be quite debilitating for legitimate sufferers, they could also be quite easily feigned, which created problems for surgeons. Doctors had very little way of separating the genuinely ill from the charlatans.²⁵ For those who endured rheumatic pain, increased humidity and changes in weather regularly caused a worsening of symptoms.²⁶ This made Arkansas’s climate particularly problematic for those with rheumatism. The state tends to experience all four seasons, so weather patterns are constantly in flux. As the war continued, the Confederate army was pushed further and further south into Arkansas’s most humid region.²⁷ Rheumatic pain can be influenced

²²Rhonda M. Kohl, “‘This Godforsaken Town:’ Death and Disease at Helena, Arkansas, 1862-63,” *Civil War History* 50, no. 2 (June 2004): 117.

²³Kohl, “This Godforsaken Town,” 135.

²⁴CDC, “Malaria.”

²⁵Wiley, *The Life of Johnny Reb*, 255.

²⁶Joe G. Hardin, “Rheumatic Pain,” in *Clinical Methods: The History, Physical and Laboratory Examinations*, 3rd edition, ed. H.K. Walker, W.D. Hall, and J.W. Hurst, (Boston: Butterworths, 1990), 753.

²⁷Mark K. Christ, “Weather in the Civil War,” *Encyclopedia of Arkansas History & Culture*, The Central Arkansas Library System, accessed March 5, 2014, <http://www.encyclopediaofarkansas.net/encyclopedia/entrydetail.aspx?entryID=7752>.

by any number of factors, but for these men, it was probably instigated by the prolonged, repetitive motion of drilling and marching day after day without adequate rest.²⁸

Arkansas's soldiers also suffered from surgical fevers. Following an operation, most commonly an amputation, nurses and medical staff would watch for signs of infection. In the modern medical age, pus is known to be a hallmark of infection, but for Civil War physicians, suppuration was considered "laudable pus" and thought to be part of the normal healing process. This belief was reinforced as nearly all wounded men contracted some type of infection due to a lack of aseptic and antiseptic practices. Despite these flawed ideas about disease, surgeons learned to recognize and treat post-operative infections once discovered.²⁹

The most deadly surgical fevers included hospital gangrene, erysipelas, and pyemia. Hospital gangrene, named for its proclivity to crowded hospitals, was likely caused by a bacterial infection that created blood clots in the arteries near the wound and subsequent tissue death due to decreased circulation.³⁰ While common in many large facilities across the country, hospital gangrene was rarely found in smaller field and local hospitals. Though it occasionally occurred, especially during the last few years of the war, few in Arkansas fell victim to this disease.³¹ Another devastating disease, erysipelas, was also caused by a bacterial infection. Symptoms included redness, tenderness, swelling, and pain in and around the wound, as well as, fever, nausea and vomiting, and

²⁸Hardin, "Rheumatic Pain," 753-4.

²⁹Cunningham, *Doctors in Gray*, 231; Bollet, *Civil War Medicine*, 200-1.

³⁰Bollet, *Civil War Medicine*, 202-3.

³¹Chisolm, *A Manual of Military Surgery*, 245; Bollet, *Civil War Medicine*, 201-3; Cunningham, *Doctors in Gray*, 239-41.

excessive suppuration.³² If uncontrolled, erysipelas could enter the bloodstream and spread throughout the body, giving rise to pyemia.³³ Pyemia, or blood poisoning, resulted in the formation of abscesses all over the body. The patient experienced a high fever, swelling and soreness in the joints, and extreme pain.³⁴ Once pyemia took hold, the patient quickly became septic and usually died.³⁵ This was by far the most common and most feared of the surgical fevers, as treatments seemed to have no effect on the patient outcome and the condition was generally fatal.³⁶

Other diseases afflicting Southern soldiers stationed in Arkansas, included bronchitis, pneumonia, cholera, venereal diseases, and various skin infections. Outbreaks of bronchitis and pneumonia occurred mostly during the winter months and often came as a result of a primary infection such as typhoid fever or measles.³⁷ Confederate doctors made great strides in treating pneumonia, progressing from treatment by bleeding and blistering to the use of expectorants and pain medication.³⁸ Cholera, a disease principally spread via contaminated drinking water, beset particularly filthy camps and caused severe diarrhea and subsequent dehydration.³⁹ While some men did suffer from venereal

³²Chisolm, *A Manual of Military Surgery*, 227-8.

³³Bollet, *Civil War Medicine*, 201-2.

³⁴Chisolm, *A Manual of Military Surgery*, 246-8; Bollet, *Civil War Medicine*, 83, 200-2.

³⁵Cunningham, *Doctors in Gray*, 241.

³⁶Chisolm, *A Manual of Military Surgery*, 246-8.

³⁷Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 3, 7-9.

³⁸Cunningham, *Doctors in Gray*, 203.

³⁹CDC, "Cholera-*Vibrio cholera* infection," accessed February 17, 2014, <http://www.cdc.gov/cholera/general/index.html>. Though certainly unpleasant, this type of cholera must be distinguished from Asiatic cholera, the deadly epidemic type that has become known as the infamous killer in nineteenth century cities; Bollet, *Civil War Medicine*, 286.

diseases, particularly gonorrhea and syphilis, infection rates tended to be less than elsewhere in the South.⁴⁰ Though skin diseases were not fatal, they were a widespread and constant nuisance, as were the vectors by which the infections were carried. Lice, fleas, and mites became universal in numerous camps.⁴¹

Troops stationed in Arkansas experienced a very high rate of disease. In 1863, nearly 32,000 soldiers were stationed in the state, yet more than half of those were not available for duty.⁴² One private wrote home to his wife that almost every man in his Texas company was sick.⁴³ Another soldier experienced three separate illnesses in the first six months he was in the army.⁴⁴ Dr. Fentress, an assistant surgeon who served throughout the state, wrote home regularly and routinely mentioned the staggering number of sick in his unit. In July 1863, he even turned a plantation home into a temporary hospital as one-third of his men had fallen ill.⁴⁵ In most other states, soldiers saw a decrease in illnesses as the war progressed, but because of the prevalence of

⁴⁰Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 7-8; Though Civil War armies are notorious for venereal disease, very little could be found regarding the rate of sexually transmitted diseases in Arkansas. Of the hundreds of cases in Dr. Dye's casebook, only one is mentioned that has a venereal disease. The diaries of both Dr. Baer and Dr. McPheeters make no mention whatsoever of sexually transmitted diseases. Most likely this was due to Arkansas's lack of cities, its sparse population, and the almost continual movement of the units within the state, or simply a lack of reporting such illnesses because of the stigma associated with them.

⁴¹J. B. Jones, "A Tale of Two Cities: The Hidden Battle Against Venereal Disease in Civil War Nashville and Memphis," *Civil War History* 31, no. 3 (1985): 270-6.

⁴²Steiner, *Disease in the Civil War*, 227-8.

⁴³B.F. Tamplin to Retincia, May 9, 1862, William H. Tamplin Letters, 1862-1865, Special Collections, Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

⁴⁴Clark, "Diary of Powhatan Clark, 1862-1863," Baton Rouge, LA.

⁴⁵David Fentress to Aunt, July 21, 1863, The David W. Fentress Family Letters, 1856-1969, The Portal to Texas History Digital Collections, University of North Texas Libraries, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metapth160260/>; See also: David Fentress to wife Clara, December 10, 1862; July 12, August 7, August 15, and August 28, 1863; and August 30, 1864.

malaria, in Arkansas this rule did not hold true.⁴⁶ Historian Stewart Brooks supposed that, “the sickness rate for the Western Theater—among the men of the frontier—tended to be double that of the Eastern.”⁴⁷ Though Confederate records in the aggregate cannot be found concerning Arkansas, it is likely that statistics might compare to those of the Union army in the state. For the Union, those stationed in Arkansas proved the unhealthiest troops in the entire Federal ranks. Of the approximately 183,000 Yankees from the state who were hospitalized during the final two years of the war, 98 percent of patients were admitted due to illnesses; only 2 percent of soldiers came to be treated for wounds, injuries, or accidents.⁴⁸

The ubiquity of disease in the state occurred primarily for three reasons: soldiers’ unseasoned or weakened immune systems, ease of contagion transmission, and lack of adequate medical intervention. The rebel troops serving in Arkansas during the war came almost exclusively from Arkansas, Missouri, and Texas. Prior to the conflict, these states had an average rural population of nearly 93 percent.⁴⁹ As such, farm boys who had rarely ventured far from home made up a majority of the initial recruits. Isolated in their individual environments, these men had not been previously exposed to communicable childhood diseases, such as measles and mumps, meaning they had no immunity to these ailments. Instead, when they came together with troops from different regions, their

⁴⁶Brooks, *Civil War Medicine*, 231-2.

⁴⁷Brooks, *Civil War Medicine*, 109.

⁴⁸Bobby Roberts and Carl Moneyhon, *Portraits of Conflict: A Photographic History of Arkansas and the Civil War* (Fayetteville, AR: University of Arkansas Press, 1987), 143.

⁴⁹US Census Bureau, *Historical Statistics of the United States: Colonial Times to 1970*, part I, series A, 195-209, “Population of States by Sex, Race, Urban-Rural Residence, and Age: 1790-1970,” (Washington, D.C., 1975), 24, 30, 35.

immune systems quickly became overloaded and epidemics broke out.⁵⁰ In Arkansas, Dr. W.L. Gammage of the 4th Arkansas recorded his experience entering camp saying, “We had been here but a few days when the measles, that terrible scourge of armies, made its appearance.”⁵¹ Within thirty days he noted one hundred cases of measles within the regiment. In about a month’s time, approximately thirty soldiers had died without ever stepping onto the battlefield. As he later recalled, there was more sickness “than I have ever known in one command in so short a time.”⁵² In October 1861, the 12th Arkansas experienced an extraordinary measles outbreak. Of the 1,100 men listed on the regimental roster, 950 of them reportedly contracted the malady.⁵³

After the first months of military life, these widespread epidemics became less commonplace. Those who survived the initial onslaught of infection had increased immunity to the camp diseases. However, they continued to suffer from other illnesses as exposure, exhaustion, malnutrition and impure water, and battle wounds weakened soldiers’ immune systems. Dr. Henry Dye, an assistant surgeon stationed in Arkansas, noted in his casebook, “The toilsome marches in midwinter, badly clothed and living on an impoverished diet, together with the demoralizing influence of retreat and the crowded conditions of the hospitals, all tended to produce a frightful mortality.”⁵⁴

⁵⁰Wiley, *Life of Johnny Reb*, 245-6; Brooks, *Civil War Medicine*, 106-9; Cunningham, *Doctors in Gray*, 164-6, 188-9.

⁵¹Gammage, *The Camp, The Bivouac, and the Battle Field*, 16.

⁵²Gammage, *The Camp, The Bivouac, and the Battle Field*, 17.

⁵³Goodspeed Publishing Company, *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties, Arkansas* (Chicago: The Goodspeed Publishing Company, 1889), 472.

⁵⁴Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 3.

Arkansas experienced particularly brutal winters throughout the war, particularly in 1863 and 1864. Not only did these seasons have extraordinarily cold temperatures, but the weather also fluctuated alarmingly quickly and drastically leaving soldiers unprepared for the conditions. At the same time, the summers were oppressively hot and humid. Throughout 1863, and later in the spring of 1864, flooding became commonplace.⁵⁵ These environmental conditions worked to wear down the rebels' bodies making them increasingly susceptible to infection. Furthermore, these men had little way of protecting themselves from the elements as the government failed to provide them with adequate clothing and shelter.⁵⁶ One surgeon reported soldiers having to go home to Texas to get clothing for their unit on multiple occasions.⁵⁷ Even doctors suffered from a lack of protection from the elements. As one surgeon recounted, "[I] have been wet for a week, sleeping all the time in my wet clothes which I could not take off."⁵⁸

Pure exhaustion also worked to hinder the immune systems of the men. One private was so exhausted from the toil of marching and soldiering that he fell asleep during a battle.⁵⁹ In 1864, a surgeon serving in an Arkansas hospital made note of the numerous men coming in who had marched over five hundred miles in the two months

⁵⁵Christ, "Weather in the Civil War," *Encyclopedia of Arkansas History & Culture*.

⁵⁶For a more in-depth discussion about the lack of clothing and tents, please see Chapter 3.

⁵⁷David Fentress to wife Clara, August 4, 1863, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160331/>; David Fentress to wife Clara, September 4, 1863, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160259/>; David Fentress to wife Clara, August 30, 1864, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph182684/m1/1/>.

⁵⁸F. Terry Hambrecht and Terry Reimer, eds., *Caleb Dorsey Baer: Frederick, Maryland's Confederate Surgeon*, (Frederick, MD: The NMCWM Press, 2013), 19.

⁵⁹Kim Allen Scott, "Eloquent Brevity: The Arkansas Campaign Diary of Henry Elliott Thompson," *AHQ* 70, no. 2 (2011): 181.

prior to hospital admittance.⁶⁰ Marches commonly began between 3:00 AM and 5:00 AM and lasted well into the night, with few breaks and carrying heavy equipment.⁶¹ Making matters worse, the roads in Arkansas were notoriously treacherous. Roads in the northern part of the state tended to be rugged; those in the southern region were regularly boggy.⁶³ Troublesome routes made marches all the more difficult. General Sterling Price alluded to the misery of his soldiers during their retreat from Camden in May of 1864. He reported “The nature of the ground, swampy, with dense woods and undergrowth, rendered the movements of the troops very difficult, and the falling rain increased the discomfort of the men already nearly exhausted by long marches and loss of rest.”⁶⁴

But the troops were not just physically exhausted. They suffered mental, emotional, and psychological fatigue from the intense trauma of war and its horrific consequences for all involved. As historian Bell Irvin Wiley explained, “In the wake of his baptism of fire Johnny Reb experienced a deep and persistent depression. His complete exhaustion, coupled with the incessant groaning and piteous wailing of the wounded, pierced his unhardened soul to the quick.”⁶⁵ Henry Stanley, a private in the 6th Arkansas, astutely observed the relationship that unnecessary harshness from the regimental officers had on soldiers’ psychological and physical health. “These made a

⁶⁰Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 17.

⁶¹Pitcock and Gurley, *I Acted from Principle*, 149-51, 239-40; Hambrecht and Reimer, *Caleb Dorsey Baer*, 82-3; Blessington, *The Campaigns of Walker’s Texas Division*, 36-8; Wiley, *The Life of Johnny Reb*, 69, 73.

⁶³Mark K. Christ, ed., *Rugged and Sublime: The Civil War in Arkansas* (Fayetteville, AR: University of Arkansas Press, 1994), xii.

⁶⁴“Report of Major General Sterling Price, C. S. Army,” May 1864, *O.R.*, ser. 1, vol. XXXIV, part I, 782.

⁶⁵Wiley, *The Life of Johnny Reb*, 32.

mighty list of harassments, which, on account of the miserably hard fare, and insufficient preparation of it, weighed on our spirits like lead, tended to diminish our number by disease, and sent hundreds to the hospital.”⁶⁶

Southerners in Arkansas were further weakened by malnutrition. In order to fight invading pathogens, the human body needs abundant vitamins and minerals in the form of fruits and vegetables. At the very least, it needs a caloric intake sufficient to supply the energy required to protect the body. Sadly, troops hardly ever got the fresh produce their bodies desired, and on occasion, they went without any rations at all.⁶⁷ One officer serving in Arkansas recalled the suffering of his men saying, “They lived on ‘blue beef’ and cracked corn, when they could get even that for often they had nothing.”⁶⁸ Dr. William McPheeters, a surgeon in General Sterling Price’s army, recalled the lack of provisions during the retreat after the failed invasion of Missouri. He reported walking through “an uninhabited region without forage or subsistence for man or beast,” and that the soldiers had become so famished they were “feeding on hickory nuts, acorns, and dead horse flesh.”⁶⁹ The rations provided by the government usually included salted meat, cornbread, and “coffee.” By 1863, real coffee was difficult to find, and so acorns, rye, and even “grated crusts of bread” served as substitutions.⁷⁰ At times, the boys found the cornbread little better. Dr. Caleb Baer, a highly regarded surgeon, recorded the rations

⁶⁶Stanley, *The Autobiography of Sir Henry Morton Stanley*, 178.

⁶⁷Wiley, *The Life of Johnny Reb*, 99-107; David Fentress to wife Clara, August 30, 1864; Bollet, *Civil War Medicine*, 337, 341-3.

⁶⁸Donal J. Stanton, Goodwin F. Berquist, and Paul C. Bowers, eds., *The Civil War Reminiscences of General M. Jeff Thompson* (Dayton, OH: Morningside, 1988), 183-4.

⁶⁹Pitcock and Gurley, *I Acted from Principle*, 243.

⁷⁰*Arkansas True Democrat*, February 6, 1862.

provided to his men saying, “our army had lived upon what ever could be obtained in the country part of the time Rye ground but not bolted and upon cornmeal so sour that the stock would not eat it,” and later recalled eating bread “as hard to crack as some of the metaphysical questions of the present era.”⁷¹

Occasionally troops would be able to secure foods from a local garden, but as the war progressed and both armies ravaged the land, supplemental produce became increasingly rare. Soldiers began suffering from diseases like scurvy, which is caused by a vitamin C deficiency, because of the lack of fruits and vegetables in their diet.⁷² This diet both weakened their immune systems and probably also caused manifold gastrointestinal issues from the rancid meat and low fiber intake. After discussing the constant need for food and clothing, one doctor wrote, “The people should pity the poor soldier who is sick in camp. –he dies of sickness that would not be considered ever serious at home.”⁷³ Part of the problem was neither one of quality or quantity of the food, but rather that the men had no idea how to cook. One private recalled that the soldiers in his company were “ignorant of the art of converting their ration of raw beef and salt pork, field beans, and flour into digestible food...yet they were daily served with rations, which they might eat raw. The raw provisions were excellent and abundant, and they only needed to be properly prepared to have made us robust and strong.”⁷⁴ As well, troops frequently drank muddy, contaminated, insalubrious water. Men recorded consuming

⁷¹Hambrecht and Reimer, *Caleb Dorsey Baer*, 44, 164.

⁷²Bollet, *Civil War Medicine*, 343-6.

⁷³David Fentress to wife Clara, December 10, 1862, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160250/>.

⁷⁴Stanley, *The Autobiography of Sir Henry Morton Stanley*, 178-9.

stagnant, putrid water on several occasions. One rebel surgeon in Arkansas described drinking water that was “thick with insects.”⁷⁵ Federals moving through Arkansas reported water that was hot, muddy, and unfit for animals.⁷⁶ At some of Arkansas’s camps, water of any quality was scarce.⁷⁷ Malnutrition, dehydration, and the consumption of unclean water, all served to further hinder the body’s natural defenses.

Likewise, wounds effectively weakened soldiers’ immune systems. When injuries occur, the body uses what resources it has available to work towards healing, causing the patient to become susceptible to opportunistic infections.⁷⁸ Men who recovered from infected wounds sometimes died from a secondary disease that he might have ordinarily been able to fight off.⁷⁹ Dr. Henry Dye made detailed notes on the patients he treated following the Battle of Jenkins’ Ferry. He mentions multiple soldiers who, soon after being injured suffered from ailments such as diarrhea, respiratory infections, eye infections, and jaundice, in addition to their infected wounds.⁸⁰

Disease in Arkansas was also prevalent due to the easy transmission of pathogens in the state’s camps. Camp conditions were almost without exception exceedingly unhygienic. Out of necessity, these sites were customarily located near bodies of water.

⁷⁵John Q. Anderson, *A Texas Surgeon in the C.S.A.* (Tuscaloosa: Confederate Publishing Company, Inc., 1957), 67-8.

⁷⁶Kohl, “This Godforsaken Town,” 114-5.

⁷⁷Pitcock and Gurley, *I Acted from Principle*, 323.

⁷⁸Patrick R. Murray, Ken S. Rosenthal, and Michael A. Pfaller, *Medical Microbiology*, 6th edition (Philadelphia: Mosby, Inc., 2009), 123-5, 142-3.

⁷⁹Though there are several documented cases of men dying from secondary infections, the number is probably much higher than can be ascertained. This is due to the fact that most men were treated for their wounds and then sent to recuperate elsewhere, either at home or in another hospital, making records difficult to find following each individual soldier for the entirety of his recovery.

⁸⁰Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 17-35.

But stagnant waters provided a breeding ground for mosquitoes, which carried the parasite that causes malaria. Men preferred not to use designated latrines nor bathe consistently, leading to high incidences of pathogens spread via the fecal-oral route. One private recalled allowing weeks to pass without bathing.⁸¹ Pests such as lice, fleas, mites, and flies, became ubiquitous. Not only were these parasites irritating, but they also caused infections such as scabies, called camp itch, and carried diseases like typhus.⁸² Countless soldiers recorded their battles with these vermin. Dr. McPheeters complained in his diary about “a restless night, rendered so by fleas, which invaded my bed and preyed upon me at a merciless rate,” and later mentioned sleeping “as much as the fleas would allow.”⁸³ Flies, too, plagued his rest as he expressed his exasperation writing that “sleep was out of the question with the thousand and one flies humming around and crawling over me.”⁸⁴ So numerous were these pests that troops jokingly made a ranking system of the best and worst parasites to invade the camps.⁸⁵ Squalid conditions provided an excellent environment for these vectors to thrive and the inherently close quarters allowed for infections to spread easily. Men shared food, clothing, blankets, and tents, exposing one another to sickness of all kinds. Without taking prophylactic measures, they had little hope of disease prevention. One surgeon believed camp conditions to be so poor that after recovering from a prolonged ailment in a private home, he wrote his wife

⁸¹Stanley, *The Autobiography of Sir Henry Morton Stanley*, 184; Chisolm, *A Manual of Military Surgery*, 53-4; Bollet, *Civil War Medicine*, 55.

⁸²Wiley, *The Life of Johnny Reb*, 249-50; Murray, Rosenthal, and Pfaller, *Microbiology in Medicine*, 899-909; Cunningham, *Doctors in Gray*, 209-10.

⁸³Pitcock and Gurley, *I Acted from Principle*, 175, 179.

⁸⁴Pitcock and Gurley, *I Acted from Principle*, 184.

⁸⁵John C. Grady and Bradford K. Felmly, *Suffering to Silence: 29th Texas Cavalry, CSA Regimental History* (Quanah, TX: Nortex Press, 1975), 144-5.

claiming that had he stayed with the army, he would have died.⁸⁶ Despite these morbid images, some living conditions were quite comfortable and relatively healthy. However, this was not the norm.⁸⁷

Hospitals in Arkansas were often not much better than camps. In fact, the regimental surgeon of the 12th Arkansas refused to obey an order to leave his men at one hospital because of the pitiful conditions.⁸⁸ In Richmond, Surgeon General Samuel Moore pioneered the use of pavilion hospitals which separated patients into different wards based on their illness.⁸⁹ But across the Mississippi, doctors lacked the resources and manpower to erect such elaborate structures. Most hospitals in the region were crowded and small. Because of space constraints, a soldier suffering from pneumonia might be placed next to a patient with syphilis. After a battle, a wounded soldier might fill the bed just evacuated by a man with dysentery. The casebook of Dr. Henry Dye records cases of wounds intermixed with cases of illness all with similar dates, indicating that he probably treated these patients one after the other, almost certainly without washing his hands.⁹⁰ In converted churches, all soldiers were housed together in one large room, regardless of malady. In early 1863, Dr. Junius Bragg converted an Episcopal church into a hospital by arranging fifty cots in the nave as the area for patient care and

⁸⁶David Fentress to wife Clara, June 30, 1863, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160252/>.

⁸⁷Pitcock and Gurley, *I Acted from Principle*, 321-5.

⁸⁸Goodspeed, *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties, Arkansas*, 472.

⁸⁹Brooks, *Civil War Medicine*, 47.

⁹⁰Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 57-74.

using the anteroom as a morgue.⁹¹ This overcrowding created optimum conditions for disease transmission.⁹²

Without adequate medical intervention, Confederates in Arkansas continued to battle disease more frequently and with far more deleterious outcomes, than fighting the Yankees. Negligence by some doctors began at the onset of the conflict. As new recruits joined the army, they were supposed to undergo a physical screening. Unfortunately, many were not.⁹³ As one soldier recalled, “We were not subjected to the indignity of being stripped and examined like cattle, but were accepted into the military service upon our own assurance of being in fit condition.”⁹⁴ Without a proper examination, countless men were allowed to fill the ranks who ended up being a handicap to their units either because of their age or previous infections.⁹⁵ Standards for the examination of recruits were instituted in 1862, which helped for a time. But as the quantity of soldiers was deemed more important than their quality and the need for new troops mounted, regulations became increasingly lax. Again, these recruits generally became burdens instead of blessings to their units.⁹⁶

Throughout the war, medical attention remained lacking due in part to the insufficient number of medical staff. Doctors commonly held prominent positions in their

⁹¹Mrs. T. J. Gaughan, ed., *Letters of a Confederate Surgeon, 1861-65* (Camden, AR: The Hurley Co., Inc., 1960), 113.

⁹²Also, in the hospitals men would have probably suffered immunodeficiencies as outlined above, further complicating the problem of infection.

⁹³Wiley, *The Life of Johnny Reb*, 245.

⁹⁴Stanley, *The Autobiography of Sir Henry Morton Stanley*, 169.

⁹⁵Wiley, *The Life of Johnny Reb*, 245.

⁹⁶Cunningham, *Doctors in Gray*, 163-4; Confederate War Department, *Regulations for the Medical Department of the C.S. Army* (Richmond: Ritchie & Dunnivant, 1862), 11.

respected communities. Because of this, when units began forming in 1861, physicians regularly accepted roles as captains or other officers possibly to satisfy their desires to fight in the one grand battle that would end the war.⁹⁷ Other physicians were asked to stay home by community members who saw no other option for medical care in their rural locality.⁹⁸ Furthermore, some of the most experienced and capable surgeons in Arkansas were either too old or exempt from participating in the war due to their slave ownership.⁹⁹ As the conflict progressed, army surgeons got sick, were transferred, died, or went back home, and the medical department had an increasingly difficult time finding replacements for them. In March and July 1863, several regiments in Walker's Division of the Trans-Mississippi reported having no surgeon or assistant surgeons at all.¹⁰⁰ The 18th Louisiana went through at least eight different surgeons during their service. Two were discharged due to illness, one left, and another was a drunk. The regiment even went for a time without any surgeon whatsoever.¹⁰¹ In addition, the Confederate draft

⁹⁷Goodspeed Publishing Company, *The Goodspeed Biographical and Historical Memoirs of Western Arkansas* (Chicago: The Goodspeed Publishing Company, 1891), 370, 381; Goodspeed, *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties, Arkansas*, 161; This was an erroneous notion held by a majority of Southerners who believed that the war would end in one swift and decisive battle.

⁹⁸Two examples of physicians who left the army or never joined to stay in communities were Drs. Albert Griffin and J.F. McAdams; Goodspeed Publishing Company, *The Goodspeed Biographical and Historical Memoirs of Eastern Arkansas* (Chicago: The Goodspeed Publishing Company, 1890), 170, 198.

⁹⁹Goodspeed, *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties*, 161.

¹⁰⁰“Return of Medical Officers in Walker's Division Trans-Mississippi serving in District of Arkansas—March 1863,” box 21, folder 14, Joseph Jones Papers, Special Collections, Howard-Tilton Memorial Library, Tulane University, New Orleans, LA; “Return of Medical Officers in Walker's Division Trans-Mississippi serving in District of West Louisiana—July 1863,” box 21, folder 14, Joseph Jones Papers, Special Collections, Howard-Tilton Memorial Library, Tulane University, New Orleans, LA.

¹⁰¹Arthur W. Bergeron, Jr., ed., *The Civil War Reminiscences of Major Silas T. Grisamore, C.S.A.* (Baton Rouge: Louisiana State University Press, 1993), 208-10.

provided an exemption for physicians, which further hindered the army's ability to recruit doctors.¹⁰²

Ignorance also hindered the doctors' ability to combat infections. In an age without germ theory, physicians did not understand the true nature of disease.

Unknowingly, surgeons facilitated the spread of bacteria and viruses as they passed from bedside to bedside without washing their hands or by performing multiple amputations without cleaning their instruments.¹⁰³ Physicians prescribed medications, such as camphor, calomel, and lead acetate, which have since been found to be poisonous.¹⁰⁴

Nevertheless, these problems came as a result of medical knowledge during the time and not at the fault of individual doctors. In fact, by 1863, Arkansas had group of talented and capable physicians. This was partly because in 1862, General Earl Van Dorn had taken almost all troops out of Arkansas, including all of the incompetent doctors who had been given their posts without an examination. In the summer of that year, General Hindman took command of the district and established the Medical Department of the Trans-Mississippi. The new medical department set out to create a qualified and effective corps of surgeons and put each candidate through a rigorous test to ensure his proficiency before offering him a commission.¹⁰⁵

¹⁰²Persons Exempt from Military Duty Act of 1862, Chapter XLV, 1st Cong., 2nd sess. (April 21, 1862), § 1, in *Public Laws of the Confederate States of America Passed at the Second Session of the First Congress; 1862*, ed. James M. Matthews (Richmond: R.M. Smith, 1862), 77-9.

¹⁰³Bollet, *Civil War Medicine*, 25, 91.

¹⁰⁴Kohl, "This Godforsaken Town," 121.

¹⁰⁵Notes on the medical history of the Trans-Mississippi Department furnished by Dr. Keller, Medical Director, UCV, Arkansas, 1893," folder 14, Joseph Jones Papers, Special Collections, Howard-Tilton Memorial Library, Tulane University, New Orleans, LA; Cynthia DeHaven Pitcock, telephone interview by author, August 29, 2013.

Sometimes, ignorance was not the problem, but rather the negligence of superior officers. By 1863, surgeons recognized that a dirty camp experienced far more illness than a clean one. Yet, many physicians failed to convince their commanders to take sanitation seriously.¹⁰⁶ At other times officers neglected, intentionally or otherwise, to inform the doctors about troop movements or impending battles. This lack of communication periodically left surgeons unprepared for battles and long marches.¹⁰⁷ Physicians at hospitals in Arkansas also had to deal with the constant, hasty transfer of patients and movement of the institutions as both armies battled for the state, gaining and losing territory almost daily. Without being able to follow patients throughout their entire hospitalization, it was difficult to know a patient's medical history and prior treatments.¹⁰⁸

Surgeons suffered from a shortage of supplies and medications. Hospital and camp medical stores were almost constantly scarce.¹⁰⁹ In the spring of 1863, Dr. Henry Dye reported that Little Rock had reduced its number of hospitals from nine to three because of scant provisions and fewer patients.¹¹⁰ But supplies were inadequate even for the three remaining hospitals. Later, he wrote that he had found iodine useful in cleaning

¹⁰⁶Wiley, *The Life of Johnny Reb*, 260; Brooks, *Civil War Medicine*, 8, 108; Gaughan, *Letters of a Confederate Surgeon*, 104-5.

¹⁰⁷David Fentress to wife Clara, March 29, 1863, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160330/>; Wiley, *The Life of Johnny Reb*, 263-4.

¹⁰⁸Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 16, 45, 64.

¹⁰⁹Bollet, *Civil War Medicine*, 245-7.

¹¹⁰Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 3-4; Dye noted that the decrease in patients was due to both deaths, at a rate of eight men a day during the months of December, January, and February, and a healthier army.

a wound, but quickly ran out.¹¹¹ After waiting far too long on promised medications from the government, one doctor took matters into his own hands. He traveled from southern Arkansas to Houston, Texas, to purchase his own drugs and brought the much needed supplies back to his men.¹¹² When provisions could be found, they were not always helpful. Multiple surgeons recorded instances of “spurious” smallpox vaccinations or vaccines that conferred illness instead of immunity. In late 1864, Dr. Dye reported a large number of soldiers who were disabled by a deleterious vaccine evidently coming from a contaminated source.¹¹³ Without the knowledge, materials, and medications needed by doctors to effectively combat disease, infections remained rife among Arkansas’s Confederates.

Though unable to stop the spread of disease, surgeons never ceased their attempts to treat the soldiers’ afflictions. Almost universally, the most important component to their treatment methods included the use of medications. During the 1860s, nearly 70 percent of medications were derived from plants. Some of the most extensively used botanicals included quinine and opium. Drugs also came from minerals such as “blue mass,” a mercurial compound otherwise known as called calomel, and nitrate of silver. Other pharmaceuticals were derived from animals such as cantharides, which comes from the Spanish fly.¹¹⁴

¹¹¹Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 3, 43; It should be noted that iodine is still used today in operating rooms across the globe and is a very effective anti-microbial substance. Perhaps numerous lives would have been saved from deadly surgical fevers had enough iodine been available for Dr. Dye.

¹¹²David Fentress to wife Clara, February 19, 1864, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160265/>.

¹¹³Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 84-6; Bollet, *Civil War Medicine*, 293.

¹¹⁴Bill J. Gurley, telephone interview by author, November 8, 2013. Today less than 7 percent of the medicines that we use are botanicals.

By far, the most widely used medication was quinine. Quinine had long been recognized for its ability to reduce fever, pain, and inflammation, and was a remarkably effective treatment for malaria symptoms.¹¹⁵ This miracle drug was highly sought after, particularly in Arkansas, which had an extremely high incidence of malaria. However, its source, the cinchona tree, came from South America, and importation of the drug became increasingly problematic and overwhelmingly expensive; in 1864, quinine was selling for four hundred dollars an ounce.¹¹⁶ In 1863, Dr. Joseph Jones proved that quinine could be used as a prophylactic to prevent troops from contracting malaria, but Surgeon General Moore ordered that it only be used on infected patients because of the dearth of the medicine.¹¹⁷ When quinine could be found in the Confederacy, it was frequently of questionable quality as speculators sought to profit from the desperate need for drugs.¹¹⁸

In addition to quinine, chloroform and ether became invaluable to surgeons. These anesthetics allowed the patient to sleep painlessly through an otherwise horrifically agonizing procedure.¹¹⁹ Another essential medication was opium, which was derived from the poppy plant. Opium and its related compounds, like laudanum and morphine, provided powerful pain relief and helped induce sleep.¹²⁰ Alcohol, especially whiskey, was also used as a pain reliever, in the treatment of homesickness, and to counteract

¹¹⁵Bollet, *Civil War Medicine*, 236-8.

¹¹⁶Guy R. Hasegawa, "Quinine Substitutes in the Confederate Army," *Military Medicine* 172, no. 6 (June 2007): 650-5; Frank R. Freeman, *Gangrene and Glory: Medical Care during the American Civil War* (Madison, NJ: Fairleigh Dickinson University Press, 1998), 127.

¹¹⁷Freeman, *Gangrene and Glory*, 127

¹¹⁸Hasegawa, "Pharmacy in the American Civil War," 68.

¹¹⁹Albin, "The Use of Anesthetics in the Civil War," 105-7.

¹²⁰Porcher, *Resources of the Southern Fields and Forests*, 23-35; Brooks, *Civil War Medicine*, 65.

shock.¹²¹ Liquor was mixed with a variety of other medications to create tinctures both because the alcohol was thought to have medicinal value and because its inclusion made the men more likely to actually take their medicine.¹²²

In the treatment of gastrointestinal disorders, doctors commonly used drugs like ipecac, used to induce vomiting; belladonna, used to treat intestinal cramps; magnesium sulfate, another name for Epsom salt, used to treat constipation; and mercury, in the form of calomel or tartar emetic, used to treat constipation. In patients suffering from congestive illnesses, such as pneumonia or bronchitis, doctors periodically applied mustard poultices to the skin, which caused the skin to blister and was a method of counter-irritation thought to pull inflammation away from the lungs and towards the skin, making breathing easier.¹²³ However, during the latter part of the war, physicians came to recognize the value of expectorants and routinely employed in their treatments.¹²⁴ Fevers were principally combatted with quinine, but potassium nitrate, Dover's powders, and digitalis were also used.¹²⁵ Infected wounds were generally first treated with cold-water compresses and a nutritious diet. As diseases like hospital gangrene or erysipelas spread, surgeons administered remedies such as nitric acid solutions, iodine, bromine, and

¹²¹Bollet, *Civil War Medicine*, 231-4; Brooks, *Civil War Medicine*, 34-5.

¹²²Bollet, *Civil War Medicine*, 231, 237.

¹²³Bollet, *Civil War Medicine*, 232-235; Dye, "The Illustrated Casebook of Dr. Henry M. Dye,"

¹²⁴Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 4, 13; Francis Peyre Porcher, *Resources of the Southern Fields and Forests, Medical, Economical, and Agricultural. Being Also a Medical Botany of the Confederate States; with Practical Information on the Useful Properties of the Trees, Plants and Shrubs* (Charleston: Evans & Cogswell, 1863), 51, 111, 137, 365; Confederate War Department, *Regulations for the Army of the Confederate States, 1864* (Richmond, J.W. Randolph, 1864), 241. In fact, one of the most useful expectorants used was guaiaci resinae. A synthetic of this botanical is still widely used today in over-the-counter expectorants.

¹²⁵Bollet, *Civil War Medicine*, 233, 236-7. Dover's powder was a combination of ipecac and opium.

potassium permanganate to try to disinfect the wounds, but it was usually too late.¹²⁶

These agents worked only on the body surfaces with which they had direct contact, normally the skin and exposed portions of the wound. Consequently, quite often by the time these antiseptics were introduced the infection had already spread into the bloodstream or lymphatic system.¹²⁷ Other drugs such as turpentine, colchicine, and blue mass were used as cure-all drugs, administered for a variety of maladies from diarrhea to typhoid fever.¹²⁸

Obtaining therapeutic drugs became an exceedingly formidable task for the rebel military. Problems began when medical supplies were quickly exhausted at the war's outbreak. At the same time, the Union army declared medicines contraband of war. As the conflict progressed and the blockade tightened around the Confederate coastline, pharmaceuticals became extraordinarily costly and difficult to acquire.¹²⁹ Some drugs became cost prohibitive to the South as inflation and demand caused prices to soar as high as 500 percent over the market value.¹³⁰ But the Confederacy experienced an almost constant need for more of these indispensable medications. During the summer of 1862, Dr. Keller came to Little Rock to assume the post of Medical Director of the Trans-Mississippi. Upon arrival he was shocked to find that, "There was not an ounce of

¹²⁶Dye, "The Illustrated Casebook of Dr. Henry M. Dye," 24, 43; Bollet, *Civil War Medicine*, 234; Chisolm, *A Manual of Military Surgery*, 233-4.

¹²⁷Cunningham, *Doctors in Gray*, 231; Bollet, *Civil War Medicine*, 200-2.

¹²⁸Bollet, *Civil War Medicine*, 234-6.

¹²⁹Cunningham, *Doctors in Gray*, 134-6.

¹³⁰Bollet, *Civil War Medicine*, 236-8, 244. Quinine rose to as high as \$400-\$600 (equivalent to approximately \$6000 to \$9000 today) per ounce in the Confederacy; Ibid, 245-6.

medicine nor an article of hospital furniture or bedding belonging to the government.”¹³¹

Dr. Keller and his staff immediately began to acquire necessary medications, but they had trouble keeping up with the high demand. Physicians were nearly always running low on their stores. Just a year after Keller reported ample supplies, an assistant surgeon in Arkansas reported being completely out of medication.¹³² The Confederate Medical Department acquired these essential drugs through five different ways: blockade running, smuggling, capturing Union supplies, Confederate medical laboratories, and the use of indigenous resources.

Perhaps the greatest hindrance to the procurement of medical supplies was the Union blockade of Southern ports. Though early in the war the blockade lacked effectiveness, by 1863 it had become increasingly restrictive, especially as most major port cities had fallen under Union control by this time. To counter this, the Confederate army employed blockade-runners to bring in much needed medical supplies. Indeed, nearly every vessel that entered a Southern port had medications on board.¹³³ Despite these runners' relative success, those willing to take the risk were few and caused an upsurge in import prices. In order to be fast enough to evade the Union blockade vessels, the runner ships had to be smaller and lighter, which limited their carrying capacity.

¹³¹“Notes on the medical history of the Trans-Mississippi Department furnished by Dr. Keller,” Tulane University.

¹³²“Notes on the medical history of the Trans-Mississippi Department furnished by Dr. Keller,” Tulane University; David Fentress to wife Clara, August 15, 1863, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metapht160332/>.

¹³³Cunningham, *Doctors in Gray*, 135.

Though blockade running brought some drugs into the Confederacy, it could not supply all that was needed.¹³⁴

Southerners also turned to smuggling medications for the army. At times, these illegal transactions occurred between the belligerent forces. In fact, it became commonplace for a rebel to swap cotton for drugs with a willing Yankee, especially in the West. This internal cotton trade was particularly active in Memphis, which served as a hub for black market operations.¹³⁵ On other occasions, special agents might transport medications from the North or from one side of the Mississippi to the other either to make money or simply to support the Confederate cause.¹³⁶ Dr. Keller, who served as Medical Director for the Trans-Mississippi Department, reported after the war that, “secret agents or smugglers were employed to bring medicine from Memphis, St. Louis, Cairo, and all other available points in the federal lines.”¹³⁷ Smuggling became more dangerous, but increasingly necessary after the loss of the Mississippi River. Women and children began to be used as fewer and fewer men remained in the state. Stories abound of women hiding drugs in their hoopskirts and evading federal pickets who would not dare search a lady’s undergarments. More elaborate schemes were also conceived. One such story involved a young lady who smuggled medicines into the state by stuffing them into the body of a dead mule. In another instance, a young boy was said to have placed the drugs into a trunk with a false bottom and covered the top with rotten meat, claiming

¹³⁴McPherson, *Battle Cry of Freedom*, 378-82.

¹³⁵Cunningham, *Doctors in Gray*, 136-7.

¹³⁶Brooks, *Civil War Medicine*, 67-9. Cunningham, *Doctors in Gray*, 138.

¹³⁷“Notes on the medical history of the Trans-Mississippi Department furnished by Dr. Keller;” Tulane University; Cairo here refers to the town in Illinois, not the Egyptian capital city.

it was food for his grandmother. Overpowered by the offensive smell, the Yankees on duty let him pass.¹³⁸ Looking beyond their borders, Southerners traded with Mexico for medications, though it is unclear how many of these drugs made it into Arkansas.¹³⁹

Confederates also added to their medical stores by taking every opportunity to seize Union supply trains. This provided a great wealth of effective medications already packaged and ready for transport. These drugs were typically very reliable, as they would have already been subjected to Northern purity standards. Upon capturing Federal medical wagons, surgeons expressed elation as they secured desperately needed supplies.¹⁴⁰ This method of procurement was sporadic and did not guarantee that the medications would be allocated to the location of greatest need.¹⁴¹

Seeking to find a more consistent and predictable method of acquiring pharmaceuticals, the Confederacy established medical laboratories throughout the South. These facilities began opening in 1862. The laboratories not only developed pharmaceuticals, but they also tested the purity of drugs brought in through other efforts like blockade running and smuggling.¹⁴² In Arkansas, factories arose in Arkadelphia and Little Rock and were aimed at making the Trans-Mississippi more self-sufficient in light of the “virtual impossibility of supplying it from east of the Mississippi.”¹⁴³ The laboratory at Arkadelphia produced ether and opium, as well as castor oil, mercurial

¹³⁸Pitcock, telephone interview by author, August 29, 2013.

¹³⁹Cunningham, *Doctors in Gray*, 134-5.

¹⁴⁰Bollet, *Civil War Medicine*, 245; Anderson, *A Texas Surgeon in the C.S.A.*, 101.

¹⁴¹Bollet, *Civil War Medicine*, 245; Hasegawa, “Pharmacy in the American Civil War,” 71.

¹⁴²Hasegawa and Hambrecht, “The Confederate Medical Laboratories,” 1221-4.

¹⁴³General Orders No. 1, May 31, 1862, *O.R.*, ser. I, vol. XIII, part 1, 32.

compounds, and mustard powder.¹⁴⁴ Though these medical laboratories provided substantial aid to the army, they failed to be as effective as their Northern equivalents. Yankee facilities benefitted from a sophisticated prewar industrial infrastructure that was almost entirely absent from Dixie. Confederate factories were built from scratch and had to create a novel system of obtaining supplies and distributing pharmaceuticals, an arduous task. Even when a laboratory got up and running, often it had to be relocated when enemy troops approached, disrupting affairs and slowing down production. As the Union army approached Arkadelphia, the facility there moved to Tyler, Texas.¹⁴⁵ In spite of the limited success of the medical laboratories, the Confederacy still suffered from an almost constant lack of vital medications.¹⁴⁶ Even if the medical laboratories could have provided an ample drug supply, they needed the component parts in order to manufacture the pharmaceuticals. Without the luxury of steady imports, laboratories had to rely upon Southern plants, minerals, and animals to produce necessary drugs.¹⁴⁷

As the pharmaceutical scarcity became increasingly desperate, the Confederate government began a large-scale effort to find indigenous substitutions for its medicinal needs. The culmination of this enterprise came in the form of a book. Under the direction of Surgeon General Moore, Francis Peyre Porcher wrote *Resources of the Southern*

¹⁴⁴“Attention All,” *Arkansas True Democrat*, October 29, 1862; Hasegawa and Hambrecht, “The Confederate Medical Laboratories,” 1225-6.

¹⁴⁵McPherson, *Battle Cry for Freedom*, 95-101; Hasegawa and Hambrecht, “The Confederate Medical Laboratories,” 1227-8.

¹⁴⁶Bollet, *Civil War Medicine*, 245; Brooks, *Civil War Medicine*, 67.

¹⁴⁷After 1863, the Trans-Mississippi was almost exclusively limited to substances that could be obtained west of the river.

Fields and Forests.¹⁴⁸ Published in 1863, the work detailed the uses of plants indigenous to the southern United States, both to be used by army physicians and by civilians who were equally unable to acquire medications. Of utmost importance was finding a substitute for the panacea, quinine. Porcher suggested several alternatives to quinine, such as the bark of dogwood, willow, and poplar trees, cottonseeds, and ragweed. He also offered native botanical replacements for drugs like opium, chloroform, and coffee.¹⁴⁹ Unfortunately, in his exigency to get his book into the hands of Confederate physicians, Porcher did not have time to test the surrogates for effectiveness. Instead, he relied upon sources from “any quarter,” which caused some dubious information to be included in his work.¹⁵⁰ In the end, few of Porcher’s alternatives were found to be effective replacements.¹⁵¹ As one doctor stationed in Arkansas noted, “About this time we became destitute of quinine, and from necessity were compelled to resort to substitutes in indigenous productions. These were unreliable except in very mild cases, and to prove effective then had to be administered in large quantities. We found no substitute equal to Peruvian bark and its preparations.”¹⁵² Another surgeon mentioned that he “received a small lot of medicine day before yesterday & 8 or [so] quinine in it. It is homemade

¹⁴⁸The full name of the book is *Resources of the Southern Fields and Forests, Medical, Economical, and Agricultural. Being Also a Medical Botany of the Confederate States; with Practical Information on the Useful Properties of the Trees, Plants and Shrubs*.

¹⁴⁹Porcher, *Resources of the Southern Fields and Forests*, iii-viii, 9, 44, 61-2, 91,95, 419-20.

¹⁵⁰Porcher, *Resources of the Southern Fields and Forests*, v.

¹⁵¹Bollet, *Civil War Medicine*, 246-7; Wiley, *The Life of Johnny Reb*, 257.

¹⁵²Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 3.

however from dogwood & willow bark possessing by no means the efficiancy [sic] of good quinine.”¹⁵³

In addition to searching for medical substitutions, the Confederate government attempted to enlist the help of citizens in gathering and producing effective medications. The Trans-Mississippi medical department urged druggists to sell to the medical purveyor “as much of their stock as they could.”¹⁵⁴ In 1863, a circular from the Surgeon General’s office instructed medical purveyors to try to convince Southern women to grow poppies in their gardens for use in making opiates. The publication suggested that boys and girls could easily harvest the capsules and collect the opium.¹⁵⁵ Planters and farmers were also urged to “save and cure all the leaves” of sesame plants growing on their land and to produce items like beeswax and castor oil to be used for therapeutic purposes.¹⁵⁶ Numerous newspapers commended donations made by the local citizenry and published calls for women to collect, dry, and sell botanicals to the medical purveyor.¹⁵⁷ As well, women throughout Arkansas created aid societies that sought to raise money for the health of their boys by hosting fundraisers.¹⁵⁸

¹⁵³David Fentress to wife Clara, August 15, 1863.

¹⁵⁴“Notes on the medical history of the Trans-Mississippi Department furnished by Dr. Keller,” Tulane University.

¹⁵⁵Samuel Preston Moore, “Circular from the Surgeon General’s Office Appealing to Ladies to Grow Poppies for Opium,” March 19, 1863, National Archives, War Department Collection of Confederate Records, accessed October 29, 2013, <http://www.digitalvaults.org/#/detail/10539/?record=10539>.

¹⁵⁶Porcher, *Resources of the Southern Fields and Forests*, 8-9, 27; “Beeswax Wanted,” *Washington (Arkansas) Telegraph*, December 31, 1862.

¹⁵⁷Pitcock, telephone interview by author, August 29, 2013; *Washington (Arkansas) Telegraph*, August 6, 1862; Letter to the Editor, *Arkansas True Democrat*, June 26, 1862.

¹⁵⁸Cunningham, *Doctors in Gray*, 139-43; “Concert,” *Arkansas True Democrat*, May 1, 1862.

Diseases and their treatments had a detrimental effect on the Confederate army in Arkansas. Sickness among the troops depleted the number of able-bodied men. As famed physician and researcher Dr. Joseph Jones later recorded, over half of the Southern rebels contracted illnesses during the first several months of the war, and the average soldier was sick or wounded six times during the war. He also found five times as many instances of disease than gunshot wounds.¹⁵⁹ In August 1863, the 21st Texas Cavalry was ordered to move from Pine Bluff towards Little Rock to help protect the city, but the regiment could offer no assistance as it was completely debilitated by infection. Coincidentally, the orders for movement came from a Major Morgan, who was in command of the brigade as all of the superior officers were ill.¹⁶⁰ During July 1862, General Sterling Price's army had a mean strength of 10,810 soldiers of which 6,191 had been taken ill or were convalescing. Those returned to duty were no doubt still trying to recover from diarrhea, malaria, possibly even cholera or typhoid.¹⁶² Major Grisamore of the 18th Louisiana recalled that in July of 1863, "Fevers were prevalent, and our camp exhibited the appearance of a hospital rather than a warlike body."¹⁶³ A lack of medication further complicated the problem. In August 1863, one surgeon noted that without quinine, the sick of his unit would take much longer to recover from their

¹⁵⁹Wiley, *The Life of Johnny Reb*, 244.

¹⁶⁰David Fentress to wife Clara, August 28, 1863, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160257/>.

¹⁶²"Consolidated Report of Sick and Wounded of the Army Serving in the Army of the West Commanded by Major General Sterling Price for the Month of July 1862," box 21, folder 5, Joseph Jones Papers, Special Collections, Howard-Tilton Memorial Library, Tulane University, New Orleans, LA; Bollet, *Civil War Medicine*, 337; 28.

¹⁶³Bergeron, Jr., *The Civil War Reminiscences of Major Silas T. Grisamore*, 126.

malaria.¹⁶⁴ The battle for control of the state reached a stalemate after the fall of Little Rock in the summer of 1863 almost entirely due to illnesses on both sides of the conflict.¹⁶⁵

Illness also took hold of the doctors treating the sick men. Dr. Caleb Baer, Chief Surgeon in General Price's Division, died after suffering from "a combination of disease" while serving at a field hospital after the Battle of Helena in July 1863; he was only twenty-five years old.¹⁶⁶ Without the knowledge of germ theory, the importance of prophylactic measures was unknown. For example, when working in a general hospital, best practices suggested having attendants in infectious units routinely switch places with those nursing patients in healthier wards leading to increased exposure to deadly diseases.¹⁶⁷ Ablutions, or washings of the hands and face, generally only took place once or twice daily, which did little to fend off disease.¹⁶⁸ Several physicians recorded the illnesses of themselves and their coworkers. Dr. John Jones had to leave service because of his illness.¹⁶⁹ Dr. James Keller had to relinquish his duties as medical director due to poor health after being in Arkansas less than nine months.¹⁷⁰ Dr. David Fentress recorded battling malaria, jaundice, yellow fever, diarrhea, and other unnamed illnesses in letters

¹⁶⁴David Fentress to wife Clara, August 9, 1863, accessed February 10, 2014, <http://texashistory.unt.edu/ark:/67531/metaph160256/>.

¹⁶⁵Roberts and Moneyhon, *Portraits of Conflict*, 144.

¹⁶⁶Hambrecht and Reimer, *Caleb Dorsey Baer*, 9, 21.

¹⁶⁷Chisolm, *A Manual of Military Surgery*, 92-3.

¹⁶⁸Chisolm, *A Manual of Military Surgery*, 92; Pitcock and Gurley, *I Acted from Principle*, 69.

¹⁶⁹Goodspeed, *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties, Arkansas*, 727.

¹⁷⁰"Notes on the medical history of the Trans-Mississippi Department furnished by Dr. Keller," Tulane University.

written to his wife between 1862 and 1864.¹⁷¹ Nurses and other hospital staff succumbed to illnesses too.¹⁷²

Not only were they beaten down by disease, but soldiers and physicians alike were also adversely affected by medications administered. As one medical reformer of the nineteenth century asserted, “I firmly believe that if the whole *materia medica*, as *now used*, could be sunk to the bottom of the sea, it would be all the better for mankind, —and all the worse for the fishes.”¹⁷³ For example, mercury, a common ingredient in numerous popular medications, can cause a number of side effects from mild flu-like symptoms to life threatening conditions like bowel perforation and liver and kidney damage.¹⁷⁴ To treat intestinal cramps, physicians used belladonna, a now well-known poison that can be lethal even in small doses.¹⁷⁵ Doctors who used anesthetics during surgeries were particularly at risk for negative side effects as they often performed surgeries back-to-back for several hours. Long-term exposure to ether vapors can cause skin and respiratory tract irritation, dizziness, drowsiness, and other effects on the central nervous system. Chloroform too can cause these same issues as well as nausea, disorientation, and delirium. Very high concentrations can even cause liver and kidney damage.¹⁷⁷ It can be

¹⁷¹David W. Fentress Family Letters—see letters to wife Clara dated June 23, 1863; June 30, 1863; August 15, 1863; and December 21, 1864.

¹⁷²David Fentress to wife Clara, December 10, 1862.

¹⁷³Oliver Wendell Holmes, *Currents and Counter-Currents in Medical Science, With Other Addresses and Essays* (Boston: Ticknor and Fields, 1861), 39. *Materia medica* is another name for pharmaceuticals.

¹⁷⁴Fisher Scientific, “Material Safety Data Sheet: Mercury,” Vanderbilt University, accessed February 17, 2014, <http://www.safety.vanderbilt.edu/msds/products/mercury.pdf>.

¹⁷⁵Catherine Ulbricht, et al, “An Evidence-Based Systematic Review of Belladonna by the Natural Standard Research Collaboration,” *Journal of Herbal Pharmacotherapy* 4, no.4 (2004): 62, 69-71.

¹⁷⁷National Research Council, *Prudent Practices in the Laboratory: Handling and Disposal of Chemicals* (Washington, D.C.: The National Academies Press, 1995), 282, 296

assumed then, that surgeons working for extended periods of time likely felt poorly while operating, putting both themselves and their patients at risk. Though with extra hands unlikely to appear and a high risk of death associated with a prolonged period between injury and amputation, any doctor was probably better than no doctor at all.¹⁷⁸

Additionally, many of these drugs made diagnosis and treatment of infections difficult as physicians had trouble distinguishing between side effects and symptoms. For instance, a private might come to a doctor with a fever, headache, and fatigue for which the surgeon prescribes him quinine. The next day, the soldier comes in again, but this time with diarrhea too. At this point the physician might be unsure how to treat this patient. All of the symptoms are consistent with both malaria and typhoid fever except diarrhea, which does not commonly occur in malaria, but can be a side effect of quinine. Three of the most routinely prescribed medications, quinine, ipecac, and turpentine, can all induce diarrhea, nausea, vomiting, and gastrointestinal distress.¹⁷⁹ Opium can cause constipation and mental confusion. Mercury poisoning can present symptoms similar to those of scurvy.¹⁸⁰ Compounding the confusion was the practice of prescribing multiple medications at the same time in an attempt to control symptoms. In one case, a surgeon recorded treating a patient suffering from diarrhea with “sulphate of copper with morphine, subnitrate of bismuth and opium, [and] compound powder of alum also.”¹⁸¹

¹⁷⁸Cunningham, *Doctors in Gray*, 222-4. However, on some occasions patients would have probably been better off without any medical intervention.

¹⁷⁹Kohl, “This Godforsaken Town,” 113-4, 121.

¹⁸⁰Bollet, *Civil War Medicine*, 234-5, 247, 347-9.

¹⁸¹Dye, “The Illustrated Casebook of Dr. Henry M. Dye,” 6.

This habit created an increased risk for negative side effects, and failed to consider the possible contraindications.¹⁸²

But these diseases and the drugs used to treat them effected rebel soldiers far beyond their physical bodies. Infections and their remedies had a sizable influence on the morale of the troops and their doctors. Death and disfigurement caused men to long for home, to be surrounded by those they loved. Watching comrades suffer and die seemed too much to bear any longer.¹⁸³ Writing home to his wife, B.F. Tamplin reported being surrounded by “deth and diseas [sic]” and admitted that sometimes he wished that he was dead.¹⁸⁴ Physicians, too, became increasingly despondent as the conflict continued. In the same letter, Tamplin noted that his friend Dr. Boynton, “has got the blues the worst of any man I ever saw.”¹⁸⁵ As the medical department struggled to fill empty positions when doctors became ill or died, furloughs for medical staff became harder to obtain. This policy further weakened the doctors’ morale. As one doctor noted, “A physician in the Army would have little chance of returning home except by a resignation...the surgeons allowed by law not being even sufficient to supply the wants of the Army when all are at their posts.”¹⁸⁶ During his years in Confederate service, Dr. Roscoe Green Jennings, surgeon of the 12th Arkansas, suffered from multiple illnesses and a lack of basic necessities. Disillusioned with the military, he eventually resigned his post and became a

¹⁸²In this context, contraindications refers to negative interactions between two drugs administered at the same time

¹⁸³Roberts and Moneyhon, *Portraits of Conflict*, 145.

¹⁸⁴B.F. Tamplin to Retincia, March 28, 1862.

¹⁸⁵B.F. Tamplin to Retincia, March 28, 1862.

¹⁸⁶David Fentress to wife Clara, December 10, 1862.

contract surgeon for the Union.¹⁸⁷ For countless doctors and soldiers alike, the only reason they remained in the ranks was out of a sense of commitment to their brothers in arms.¹⁸⁸

Throughout the entirety of the war, Confederate troops suffered immensely from deadly infections and painful ailments. Unlike other parts of the South, Arkansas's rebels experienced an exceptionally high incidence of malaria. The prevalence of disease primarily resulted from a combination of environmental factors, weakened immune systems, and a lack of medical intervention. Though surgeons attempted to cure patients by procuring drugs or attempting remedies, many of their treatments failed to heal the soldiers and indeed some medications caused further complications. However, several medicines such as painkillers and anesthetics effectively alleviated pain and ease the anguish of the dying. As the war progressed, disease and its consequences wore down the resolve of both the troops and their surgeons, both physically and mentally, essentially resulting in a stalemate in the Trans-Mississippi theater until General E. Kirby Smith surrendered his army in May 1865.¹⁸⁹

¹⁸⁷Goodspeed, *Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties, Arkansas*, 473-4.

¹⁸⁸James McPherson, *For Cause and Comrades: Why Men Fought in the Civil War* (New York: Oxford University Press, 1997), 77-89.

¹⁸⁹Steiner, *Disease in the Civil War*, 43.

Conclusion

In many ways, the medical situation in the Confederate army in Arkansas resulted from an amputation, not an operation performed by surgeons, but rather, a systematic and traumatic separation of the Trans-Mississippi region from its complement across the river. By the time Vicksburg fell in the summer of 1863, Jefferson Davis had already cognitively forsaken the western theater, and with the loss of the Mississippi River, the surgery was complete. Leaders in the severed limb were left trying to control the bleeding. From the moment General E. Kirby Smith assumed command of the department in 1863, he faced logistical obstacles, a lack of soldiers, and internal conflicts that worked together to threaten the life of the western Confederacy.¹

As the Federals pushed the troops in Arkansas further and further into the southwestern corner of the state, men left in droves to return to their homes and families.² At the same time, realizing that he had been abandoned by Richmond, Smith worked to establish a semi-autonomous state that became known as “Kirby Smithdom.”³ As his reign continued and he tried to ensure the self-sufficiency of the region, a formidable and ultimately unaccomplished task, Smith faced serious problems.⁴ As the Union infection threatened to overwhelm the fragile frontier, Confederate surgeons and their staffs sought

¹Joseph Howard Parks, *General Edmund Kirby Smith, C.S.A.* (Baton Rouge: Louisiana State University Press, 1954), 281-93, 403-28.

²Parks, *General Edmund Kirby Smith*, 256, 263, 375-77; Paul E. Steiner, *Disease in the Civil War: Natural Biological Warfare in 1861-1865* (Springfield, IL: Charles C. Thomas, 1968), 215; John Q. Anderson, *A Texas Surgeon in the C.S.A.* (Tuscaloosa, AL: Confederate Publishing Company, Inc., 1957), 73.

³Parks, *General Edmund Kirby Smith*, 280-2; During the war, the Trans-Mississippi came to be called “Kirby Smithdom” due to his nearly unbridled control of the region.

⁴Parks, *General Edmund Kirby Smith*, 403-28.

to diagnose and treat diseases, heal wounds, and provide comfort to the fighting men who were becoming increasingly fatigued mentally, physically, and emotionally. Though they diligently strove to maintain a healthy corps, a lack of education, experience, personnel, and supplies hindered their efforts.⁵

The Civil War came at just the wrong time in regards to medical education in America. Just as the demand for well-trained and qualified physicians surged with population growth, medical societies began deregulating the profession, most notably by revoking licensure requirements.⁶ As a result, medical schools proliferated and most accepted any student willing to pay. These schools often produced incompetent doctors who may or may not have spent time attending to actual patients.⁷ Even if a doctor had received a decent clinical and surgical education, unless he was a recent graduate at the start of the war, he likely would not have honed his skill in everyday practice. Indeed most of these “surgeons” did not earn that title until they joined the army. For those practitioners with surgical proficiency, few had any idea about military medicine, which had recently become more gruesome due to technological improvements such as rifled muskets and minie balls. Without experience, they were forced to learn on the job, reading from manuals and textbooks, all while the life of a comrade depended upon their

⁵William Royston Geise, “Kirby Smithdom, 1864: A Study of Organization and Command in the Trans-Mississippi West,” *Military History of Texas and the Southwest* 15 (1979): 20-5; H.H. Cunningham, *Doctors in Gray: The Confederate Medical Service* (Baton Rouge: Louisiana State University Press, 1958), 15, 106-32, 184-212; Haller, Jr., *American Medicine in Transition*, 200-1; Wiley, *The Life of Johnny Reb*, 244-69.

⁶Cunningham, *Doctors in Gray*, 15; Haller, Jr., *American Medicine in Transition*, 200-1.

⁷Charles Donald O’Malley, ed., *A History of Medical Education: An International Symposium Held February 5-9, 1968* (Berkeley: University of California Press, 1970), 483-5.

decisions and skills.⁸ Despite deficient education and experience, many surgeons sought to improve their knowledge by forming medical societies to collaborate and share ideas, studying medical and surgical texts, honing their skills by practicing procedures on cadavers, and keeping detailed casebooks to learn from their own successes and failures.⁹

A constant lack of personnel and supplies further complicated the situation for these doctors. The Trans-Mississippi Medical Department had an exceedingly difficult time filling the positions of surgeons. Some openings occurred when surgeons died or resigned, others needed to be filled in newly created units.¹⁰ Even when all vacancies were filled, the army was still woefully understaffed and could not meet the needs of its men. At times hired local physicians to help offset the overwhelming workload, but this did not solve the problem.¹¹ Though finding competent doctors was a difficult and constant struggle, keeping those doctors adequately supplied was an even more daunting task. With the loss of the Mississippi River and a tightening blockade of Southern ports, the Medical Department struggled to bring medical equipment into Arkansas. If supplies

⁸Chisolm, *A Manual of Military Surgery*, v-vi; James McPherson, *Battle Cry of Freedom: The Civil War Era* (New York: Oxford University Press, 1988), 473-4.

⁹Cynthia DeHaven Pitcock and Bill J. Gurley, eds., *I Acted from Principle: The Civil War Diary of Dr. William M. McPheeters, Confederate Surgeon in the Trans-Mississippi* (Fayetteville, AR: University of Arkansas Press, 2002), 76-7, 94-7, 101, 113-4, 120; Dye, "The Illustrated Casebook of Dr. Henry M. Dye."

¹⁰New regiments were essential in Arkansas in the spring of 1862, when General Earl Van Dorn moved the Army of the West to the eastern side of the Mississippi River to join the fight at Corinth, MS, leaving Arkansas without a fighting force. In the months to follow, a new army had to be created. As William L. Shea and Earl J. Hess described it, the Van Dorn's replacement was left to "assemble an army and establish a logistical base from scratch in the least populous and least developed part of the Confederacy;" William L. Shea and Earl J. Hess, *Pea Ridge: Civil War Campaign in the West* (Chapel Hill: University of North Carolina Press, 1992), 296.

¹¹Return of Medical Officers in Walker's Division, Trans-Mississippi, Return of Medical Officers in Walker's Division, March 1863, July 1863," box 21, folder 14, Joseph Jones Papers, Howard-Tilton Memorial Library Special Collections, Tulane University, New Orleans, LA; David Fentress to wife Clara, December 10, 1862, The David W. Fentress Family Letters, 1856-1969, The Portal to Texas History Digital Collections, University of North Texas Libraries, accessed January 12, 2014, <http://texashistory.unt.edu/ark:/67531/metaph182661/m1/2/>; Anderson, *A Texas Surgeon in the C.S.A.*, 58, 106; Cunningham, *Doctors in Gray*, 32, 75.

did make it into the state, the rebels faced major obstacles transporting it due to the rugged terrain, pitiful roads, Union occupation, guerrilla forces, and a lack of railroads.¹²

Despite these severe handicaps, surgeons in Arkansas still attempted to establish and maintain the health of their units. Green troops proved the most difficult to keep healthy, especially late in the war as new recruits became more diverse in age and admission to the army was open to nearly any living male. These soldiers tended to be rural boys who contracted illnesses quickly after joining the ranks. As armies became more seasoned, they experienced fewer incidences of these camp diseases, but their immune systems were weakened with exhaustion, malnutrition, wounds, and harsh weather. Decreased immunity coupled with the unhealthy living conditions made for easy transmission of pathogens. In addition to the wounded, surgeons primarily treated men suffering from malaria, diarrhea, and dysentery, but illnesses ranged from smallpox to pneumonia and from gonorrhea to hospital gangrene.¹³

In spite of these formidable obstacles to their success, Confederate surgeons in Arkansas remained resolute in their commitment to their men. These physicians served in small tent hospitals and filthy camps, on the gruesome battlefield, and on the sides of dusty roads. They worked all night in field hospitals performing operations by moonlight in order to save the lives of their soldiers.¹⁴ They spent weeks at battlefields after the final shot had been fired, searching for casualties and treating the injured without regard to

¹²Mark K. Christ, ed., *Rugged and Sublime: The Civil War in Arkansas* (Fayetteville, AR: University of Arkansas Press, 1994), xii, 58; Sutherland, "Guerrillas in Arkansas," 280-5.

¹³*Historical Statistics of the United States: Colonial Times to 1970*, Part I, series A, 195-209, "Population of States by Sex, Race, Urban-Rural Residence, and Age: 1790-1970," 24, 30, 35; Henry M. Dye, "The Illustrated Casebook of Dr. Henry M. Dye," in author's possession; Cunningham, *Doctors in Gray*, 164; *MSHWR*, 1(2); Wiley, *The Life of Johnny Reb*, 244-69.

¹⁴Adams, "Confederate Medicine," 161-73; Anderson, *A Texas Surgeon in the C.S.A.*, 58, 64.

their own safety or sustenance.¹⁵ They labored over hospital beds, committing themselves to providing care and comfort to the sick and wounded.¹⁶ They performed thousands of operations, working until their hands were stained with blood and their souls were weary with grief. They struggled to keep camps clean and to promote hygienic practices. They provided medication to the ill and maimed. When no medications could be found to treat their men, they came up with substitutes or found other means of securing necessary drugs.¹⁷ Going far above and beyond the call of duty, they even worked with their Union colleagues to help administer to the enemy's fallen.¹⁸

Yet their best efforts were ultimately insufficient as men continued to suffer and die in spite of their determination. Eventually, their new nation, too, failed. Bolstered by a successful defense of southwestern Arkansas, Smith sent General Sterling Price and a force of nearly 12,000 men on a risky campaign into Missouri in the fall of 1864. But the raid ended disastrously. His army was decimated, signaling a virtual end to the war in the Trans-Mississippi.¹⁹ On May 26, 1865, the Trans-Mississippi Department officially surrendered to the United States authorities.²⁰

Almost immediately following the war's end, medicine was revolutionized with the acceptance of the germ theory of disease. This new idea caused a paradigm shift, and

¹⁵Gammage, *The Camp, The Bivouac, and the Battle Field*, 26-7; Pitcock and Gurley, *I Acted from Principle*, 41-2.

¹⁶Chisolm, *A Manual of Military Surgery*, 66-78; Dye, "The Illustrated Casebook of Dr. Henry M. Dye."

¹⁷Guy R. Hasegawa, "Pharmacy in the American Civil War," *Pharmacy in History* 42, no.3/4 (2000): 70-2.

¹⁸William L. Nicholson, "The Engagement at Jenkin's Ferry," *Annals of Iowa* 9 (1914): 513; Gammage, *The Camp, The Bivouac, and the Battle Field*, 28.

¹⁹Castel, *General Sterling Price and the Civil War in the West*, 188-255.

²⁰General Orders No. 61, May 26, 1863, *O.R.*, ser. I, vol. XLVIII, part ii, 604-6.

doctors began to completely change the way that they diagnosed and treated diseases.²¹ Because of this transformation, the achievements made in healthcare during the conflict have been largely unrecognized. For example, the war produced a body of competent and experienced surgeons who passed on their knowledge and skills to the next generation of doctors.²² It was also during this time that nursing, dentistry, and pharmacy saw increased professionalization. The pharmaceutical industry developed a more extensive and effective manufacturing system. Women began pursuing careers in nursing without risking their reputations.²³ Because of the war, doctors began to better understand how disease spread and learned how to help maintain the health of a population. Additionally, the death and disease of the war caused a marked increase in public awareness of health and sanitation.²⁴

Throughout the process of this thesis, several problems arose. While conducting research, I faced difficulties in finding source materials, both primary and secondary sources. Like other Civil War scholars, I had trouble finding Confederate records because of the limited number that have survived until today. For example, the *Medical and Surgical History of the War of the Rebellion*, contained only accounts from only one

²¹Fielding H. Garrison, *An Introduction to the History of Medicine* (Philadelphia: W.B. Saunders, 1929), 101, 576-7, 582; Joseph Lister, "On the Antiseptic Principle in the Practice of Surgery," *British Medical Journal* 2 (September 1867): 246-8.

²²Cunningham, *Doctors in Gray*, 267-73.

²³Cunningham, *Doctors in Gray*, 267-73; Michael A. Flannery, *Civil War Pharmacy: A History of Drugs, Drug Supply and Provision, and Therapeutics for the Union and Confederacy* (Binghamton, NY: The Haworth Press, Inc., 2004), 232-7. Prior to and during the Civil War, women who traveled with armies without the company of a male were often perceived as prostitutes. Although women did serve as nurses during the war, when they did so they risked losing their status as a respectable, proper lady; Marilyn Mayer Culpepper and Pauline Gordon Adams, "Nursing in the Civil War," *American Journal of Nursing* 88, no. 7 (July 1988): 981-4; Jane E. Schultz, "The Inhospitable Hospital: Gender and Professionalism in Civil War Medicine," *Signs* 17, no. 2 (Winter 1992): 375-8.

²⁴Cunningham, *Doctors in Gray*, 267-73.

doctor who served in the Trans-Mississippi, Dr. David W. Yandell, and the reports were all from a time before he served in the region.²⁵ In addition, finding diaries, journals, letters, and other written materials from Southern surgeons in the Trans-Mississippi was difficult as very few have been published. Secondary sources were also difficult to locate due to the relatively few volumes written on both Civil War medicine and the war in the West. When materials could be found, at times I had trouble understanding exactly what was happening in a given situation. Without the current knowledge of disease, these doctors did the best they could to describe and interpret symptoms. However, when reading through their casebooks and other notes, proper identification of the disease was often problematic based on their descriptions. Without a much more extensive knowledge of medicine, I remained incapable of determining when a misdiagnosis had occurred, though there were certainly many.

Despite the copious number of works on the American Civil War, this study sheds light on a topic that has largely remained in the shadows. By bridging two frequently overlooked subjects in Civil War historiography, medicine and the conflict in the West, this work provides a novel and important perspective on the war in the Trans-Mississippi by examining the surgeons of Arkansas, their place within the army, their microbial foes, and their efforts to combat these enemies in spite of overwhelming challenges. As this study serves as a mere introduction to this topic, further research is needed to consider in detail several aspects of medicine in the western Confederacy that fell outside the scope of this project. Of particular interest to the author would be exploration of contract

²⁵*MSHWR*, 1(2): 272; 2(1): 697; 2(2): 757; 3(2): 135, 138. However, he is mentioned in a report by Surgeon Eugene F. Sanger when Dr. Yandell was serving as medical director of the Trans-Mississippi; *MSHWR*, 1(1): 336.

physicians and their role in the medical corps; the Trans-Mississippi Medical Department, its development and governance; the civilians' perspective and experiences regarding healthcare; and the examination of other medical personnel such as nurses, hospital stewards, and medical purveyors. It is the author's sincere hope that this topic will not remain in the shadows any longer, but that the future will continue to illuminate the role that medicine played in the war in the West.

Bibliography

Primary Sources

ARCHIVAL MATERIALS

“Account of the Red River Expedition to Shreveport and Back.” Special Collections. Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

Adams, Israel L. and Family Papers. Special Collections. Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

Clark, Powhatan. “Diary of Powhatan Clark, 1862-1863.” David F. Boyd Family Papers, Special Collections. Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

Dye, Henry M. “The Illustrated Casebook of Dr. Henry M. Dye.” In the author’s possession.

Fentress, David W. Family Letters, 1856-1969. The Portal to Texas History Digital Collections, University of North Texas Libraries. Accessed January 12, 2014. http://texashistory.unt.edu/explore/collections/CWADP/browse/?fq=str_title_serial%3AThe+David+W.+Fentress+Family+Letters%2C+1856-1969.

Jones, Joseph, Papers. Special Collections. Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

Jones, Joseph, Papers. Special Collections. Manuscripts Collection 172, Howard-Tilton Memorial Library, Tulane University, New Orleans, LA.

Pinson, Harriet and Family, Papers. Special Collections. Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

Tamplin, William H., Letters, 1862-1865. Special Collections. Hill Memorial Library, Louisiana State University, Baton Rouge, LA.

GOVERNMENT DOCUMENTS

Barnes, Joseph K., ed. *The Medical and Surgical History of the War of the Rebellion (1861-65)*. 6 vols. Washington: Government Printing Office, 1870-88.

Confederate States of America Congress. *Public Laws of the Confederate States of America Passed at the Second Session of the First Congress; 1862*. Edited by James M. Matthews. Richmond: R.M. Smith, 1862.

Confederate States of America Provisional Congress. *Acts and Resolutions of the First Session of the Provisional Congress of the Confederate States, Held at Montgomery, Ala.* Richmond: Enquirer Book and Job Press, 1861.

———. *Acts and Resolutions of the Second Session of the Provisional Congress of the Confederate States, Held at Montgomery, Ala.* Richmond: Enquirer Book and Job Press, 1861.

———. *Statutes at Large of the Provisional Government of the Confederate States of America.* Edited by James M. Matthews. Richmond: R.M. Smith, 1864.

Confederate States Surgeon-General's Office. "Circular: Confederate States Medical and Surgical Journal Prospectus." October 31, 1863. Richmond, Virginia.

Confederate States War Department. *Regulations for the Army of the Confederate States, 1864.* Richmond, J.W. Randolph, 1864.

———. *Regulations for the Medical Department of the C.S. Army.* Richmond: Ritchie & Dunnivant, 1862.

Moore, Samuel Preston. "Circular form the Surgeon General's Office Appealing to Ladies to Grow Poppies for Opium." March 19, 1863. National Archives. War Department Collection of Confederate Records. Accessed October 29, 2013. <http://www.digitalvaults.org/#/detail/10539/?record=10539>.

———, ed. *The Confederate States Medical and Surgical Journal.* 2 vols. Richmond: Office of the Surgeon General, 1864-5.

United States Bureau of the Census. *Eighth Census of the United States, 1860: Population of the United States in 1860.* Washington, D.C.: Government Printing Office, 1864.

———. *Historical Statistics of the United States: Colonial Times to 1970.* Part I. Washington, D.C., 1975.

United States War Department. *Compiled Service Record for Confederate General and Staff Officers and Nonregimental Enlisted Men.* Washington, DC: National Archives and Records Service, 1961. Microfilm 331.

———. *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies.* Washington, DC: Government Printing Office, 1880-1900.

PUBLISHED DIARIES, JOURNALS, LETTERS, AND MEMOIRS

Anderson, John Q. *Texas Surgeon in the C.S.A.* Tuscaloosa, AL: Confederate Publishing Company, Inc., 1957.

- Baker, T. Lindsay, ed. *Confederate Guerrilla: The Civil War Memoir of Joseph M. Bailey*. Fayetteville, AR: University of Arkansas Press, 2007.
- Bender, Robert Patrick, ed. *Worthy of the Cause for Which They Fight: The Civil War Diary of Brigadier General Daniel Harris Reynolds, 1861-1865*. Fayetteville, AR: University of Arkansas Press, 2011.
- Black, Sam. *A Soldier's Recollection of the Civil War*. Minco, OK: Minco Minstrel, 1912.
- Blessington, Joseph P. *The Campaigns of Walker's Texas Division*. New York: Lange, Little & Co., 1875.
- Bergeron, Arthur W., Jr., ed. *The Civil War Reminiscences of Major Silas T. Grisamore, C.S.A.* Baton Rouge: Louisiana State University Press, 1993.
- Flanagan, Michael, ed. "The Memoirs of Dr. Robert J. Christie." Accessed October 12, 2013. <http://flanagfamily.net/genealo/memoirs.htm>.
- Fountain, Sarah M., ed. *Sisters, Seeds, and Cedars: Rediscovering Nineteenth-Century Life through Correspondence from Rural Arkansas and Alabama*. Conway, AR: University of Central Arkansas Press, 1995.
- Gammage, W. L. *The Camp, the Bivouac, and the Battle Field: Being a History of the Fourth Arkansas Regiment, From Its First Organization to the Present Date*. Selma, AL, 1864.
- Gaughan, Mrs. T.J., ed. *Letters of a Confederate Surgeon, 1861-1865*. Camden, AR: Hurley, 1960.
- Gurley, Bill. "The Civil War Journal of Dr. Henry Dye: Texas Surgeon in the District of Arkansas." In *"The Earth Reeled and the Trees Trembled": Civil War Arkansas, 1863-1864*, edited by Mark Christ. Little Rock, AR: Old State House Museum, 2007.
- Hambrecht, F. Terry and Terry Reimer, eds. *Caleb Dorsey Baer: Frederick, Maryland's Confederate Surgeon*. Frederick, MD: NMCWM Press, 2013.
- McNeilly, James H. "Recollections from One, Who Though Not a Surgeon, Was With Them All the Time." *Southern Practitioner* 22, no. 9 (1900): 415-20.
- Pitcock, Cynthia DeHaven and Bill J. Gurley, eds. *I Acted from Principle: The Civil War Diary of Dr. William M. McPheeters, Confederate Surgeon in the Trans-Mississippi*. Fayetteville, AR: University of Arkansas Press, 2002.

Rainey, Frank. "Reminiscences of Dr. Frank Rainey." In *Reminiscences of the Boys in Gray*. Compiled by Mamie Yearly. Dallas: Wilkinson Printing Company, 1912.

Stanton, Donal J., Goodwin F. Berquist, and Paul C. Bowers. *The Civil War Reminiscences of General M. Jeff Thompson*. Dayton, OH: Morningside, 1988.

NEWSPAPERS

Arkansas True Democrat

Washington (Arkansas) Telegraph

BOOKS

Chisolm, J. Julian. *A Manual of Military Surgery: For the Use of the Surgeons in the Confederate Army with an Appendix of the Rules and Regulations of the Medical Department of the Confederate Army*. 2nd ed. Richmond, VA: West & Johnson, 1862.

Holmes, Oliver Wendell. *Currents and Counter-Currents in Medical Science, With Other Addresses and Essays*. Boston: Ticknor and Fields, 1861.

Jefferson Medical College. "Announcement of the Jefferson Medical College of Philadelphia: Session of 1860-61." *Jefferson Medical College Catalogs*. Paper 40. Accessed February 22, 2014. http://jdc.jefferson.edu/jmc_catalogs/40.

Porcher, Francis Peyre. *Resources of the Southern Fields and Forests, Medical, Economical, and Agricultural. Being Also a Medical Botany of the Confederate States; with Practical Information on the Useful Properties of the Trees, Plants and Shrubs*. Charleston, SC: Evans & Cogswell, 1863.

Stanley, Dorothy, ed. *The Autobiography of Sir Henry Morton Stanley*. Boston: Houghton Mifflin Company, 1909.

JOURNAL ARTICLES

Allen, George W. "Civil War Letters of George W. Allen." Edited by Charleen Plumly Pollard. *The Southwestern Historical Quarterly* 83, no. 1 (July 1979): 47-52.

Amberg, Emil. "The Young Physician." *Philadelphia Medical Journal* 9 (1902): 544-8.

Curtis, Samuel. "Army of the South-West, and the First Campaign in Arkansas." *Annals of Iowa* 6 (October 1868): 249-70.

Lister, Joseph. "On the Antiseptic Principle in the Practice of Surgery." *British Medical Journal* 2 (September 1867): 246-8.

McGuire, Hunter Holmes. "Progress of Medicine in the South." *Southern Historical Society Papers* 17 (January-December 1889): 3-12.

Secondary Sources

BOOKS

Adams, George Worthington. *Doctors in Blue: The Medical History of the Union Army in the Civil War*. New York: Schuman 1952.

Bailey, Anne J. and Daniel E. Sutherland, eds. *Civil War Arkansas: Beyond Battles and Leaders*. Fayetteville: University of Arkansas Press, 2000.

Baker, William D. *Historic Railroad Depots of Arkansas, 1870-1940*. Little Rock: Arkansas Historic Preservation Program, 2004.

Bayne-Jones, Stanhope. *The Evolution of Preventive Medicine in the United States Army, 1607-1939*. Washington, D.C.: Office of the Surgeon General, 1968.

Bearss, Edwin C. *Fort Smith: Little Gibraltar on the Arkansas*. Norman, OK: University of Oklahoma Press, 1969.

Bollet, Alfred Jay. *Civil War Medicine: Challenges and Triumphs*. Tucson, AZ: Galen Press, 2002.

Breeden, James O. *Joseph Jones, M.D.: Scientist of the Old South*. Lexington: University Press of Kentucky, 1975.

Brooks, Stewart M. *Civil War Medicine*. Springfield, IL: Charles C. Thomas, 1966.

Brown, Harvey E. *The Medical Department of the United States Army from 1775 to 1873*. Washington, D.C.: U.S. Government Printing Office, 1873.

Castel, Albert. *General Sterling Price and the Civil War in the West*. Baton Rouge: Louisiana State University Press, 1968.

Christ, Mark K. *Civil War Arkansas, 1863: The Battle for the State*. Norman, OK: University of Oklahoma Press, 2010.

———, ed. *Rugged and Sublime: Civil War in Arkansas*. Fayetteville: University of Arkansas Press, 1994.

Cunningham, Horace Herndon. *Doctors in Gray: The Confederate Medical Service*. Baton Rouge: Louisiana State University Press, 1958.

- . *Field Medical Services at the Battles of Manassas (Bull Run)*. Athens: University of Georgia Press, 1968.
- Davis, William C. *Jefferson Davis: The Man and His Hour*. New York: Harper Collins, 1991.
- DeBlack, Thomas A. *With Fire and Sword: Arkansas, 1861-1874*. Histories of Arkansas, edited by Elliott West. Fayetteville: University of Arkansas Press, 2003.
- Denny, Robert E. *Civil War Medicine: Care and Comfort of the Wounded*. New York: Sterling Publishing, 1994.
- Dorwart, Bonnie Brice. *Death is in the Breeze: Disease During the American Civil War*. Frederick, MD: NMCWM Press, 2009.
- Duncan, Louis C. *The Medical Department of the United States Army in the Civil War*. Carlisle Barracks, PA: Medical Field Service School, 1931.
- Ferguson, John L. *Arkansas and the Civil War*. Little Rock, AR: Pioneer Press, 1965.
- Flannery, Michael A. *Civil War Pharmacy: A History of Drugs, Drug Supply and Provision, and Therapeutics for the Union and Confederacy*. Binghamton, NY: The Haworth Press, Inc., 2004.
- Freemon, Frank R. *Gangrene and Glory: Medical Care During the American Civil War*. Madison, NJ: Fairleigh Dickinson University Press, 1998.
- Garrison, Fielding H. *An Introduction to the History of Medicine*. Philadelphia: W.B. Saunders, 1929.
- Goodspeed Publishing Company. *The Goodspeed Biographical and Historical Memoirs of Eastern Arkansas*. Chicago: Goodspeed, 1890.
- . *The Goodspeed Biographical and Historical Memoirs of Pulaski, Jefferson, Lonoke, Faulkner, Grant, Saline, Perry, Garland and Hot Springs Counties, Arkansas*. Chicago: The Goodspeed Publishing Company, 1889.
- . *The Goodspeed Biographical and Historical Memoirs of Western Arkansas*. Chicago: The Southern Publishing Company, 1891.
- Grady, John C. and Bradford K. Felmly. *Suffering to Silence: 29th Texas Cavalry, CSA, Regimental History*. Quanah, TX: Nortex Press, 1975.
- Haller, John S., Jr., *American Medicine in Transition, 1840-1910*. Urbana, IL: University of Illinois Press, 1981.

- Hewitt, Lawrence Lee, Arthur W. Bergeron, Jr., and Thomas E. Schott, eds. *Confederate Generals in the Trans-Mississippi: Essays on America's Civil War*. 3 vols. Knoxville, TN: University of Tennessee Press, 2013.
- Johnson, Ludwell H. *Red River Campaign: Politics and Cotton in the Civil War*. Baltimore: Johns Hopkins Press, 1958.
- Kerby, Robert L. *Kirby Smith's Confederacy: The Trans-Mississippi South*. New York: Columbia University Press, 1972.
- Maxwell, William Quentin. *Lincoln's Fifth Wheel: The Political History of the United States Sanitary Commission*. New York: Longmans, Green, & Co., 1956.
- McPherson, James. *Battle Cry of Freedom: The Civil War Era*. New York: Oxford University Press, 1988.
- . *For Cause and Comrades: Why Men Fought in the Civil War*. New York: Oxford University Press, 1997.
- Murray, Patrick R., Ken S. Rosenthal, and Michael A. Pfaller. *Medical Microbiology*. 6th ed. Philadelphia: Mosby, Inc., 2009.
- National Research Council. *Prudent Practices in the Laboratory: Handling and Disposal of Chemicals*. Washington, D.C.: The National Academies Press, 1995.
- Nichols, James L. *The Confederate Quartermaster in the Trans-Mississippi*. Austin: University of Texas Press, 1964.
- Oates, Stephen B. *A Woman of Valor: Clara Barton and the Civil War*. New York: Free Press, 1994.
- . *Confederate Cavalry West of the River*. Austin, TX: University of Texas Press, 1961.
- O'Donnell, William W. *The Civil War Quadrennium: A Narrative History of Day-to-Day Life in Little Rock, Arkansas, During the American War Between the States, 1861-1865*. Little Rock: Civil War Round Table, 1985.
- O'Flaherty, Daniel. *General Jo Shelby: Undefeated Rebel*. Chapel Hill: University of North Carolina Press, 1954.
- O'Malley, Charles Donald, ed., *A History of Medical Education: An International Symposium Held February 5-9, 1968*. Berkeley: University of California Press, 1970.

- Parks, Joseph Howard. *General Edmund Kirby Smith, C.S.A.* Baton Rouge: Louisiana State University Press, 1954.
- Pitcock, Cynthia DeHaven. "Gunpowder, Lard and Kerosene: Civil War Medicine in the Trans-Mississippi." In *"The Earth Reeled and the Trees Trembled": Civil War Arkansas, 1863-1864*, edited by Mark Christ. Little Rock, AR: Old State House Museum, 2007.
- Rea, Ralph. *Sterling Price: The Lee of the West*. Little Rock, AR: Pioneer Press, 1959.
- Roberts, Bobby and Carl Moneyhon. *Portraits of Conflict: A Photographic History of Arkansas in the Civil War*. Fayetteville: University of Arkansas Press, 1987.
- Rutkow, Ira M. *Bleeding Blue and Gray: Civil War Surgery and the Evolution of American Medicine*. New York: Random House, 2005.
- Schroeder-Lein, Glenna R. *Confederate Hospitals on the Move: Samuel H. Stout and the Army of Tennessee*. Columbia, SC: University of South Carolina Press, 1994.
- Serag-Wiessner KG, *The Pocket Guide to Suture Materials, Techniques, & Knots*. Naila, Germany: Serag-Weissner KG, 2006.
- Shea, William L. *Fields of Blood: The Prairie Grove Campaign*. Chapel Hill, NC: University of North Carolina Press, 2009.
- Shea, William L. and Earl J. Hess. *Pea Ridge: Civil War Campaign in the West*. Chapel Hill, NC: University of North Carolina Press, 1992.
- Slawson, Robert G. *Prologue to Change: African Americans in Medicine in the Civil War Era*. Frederick, MD: NMCWM Press, 2006.
- Smith, George Winston. *Medicines for the Union Army: The United States Army Laboratories During the Civil War*. Madison, WI: American Institute of the History of Pharmacy, 1962.
- Staples, Thomas S. *Reconstruction in Arkansas, 1862-1874*. New York: Columbia University Press, 1923.
- Steiner, Paul E. *Disease in the Civil War: Natural Biological Warfare in 1861-1865*. Springfield, IL: Thomas, 1968.
- Thomas, David Y. *Arkansas in War and Reconstruction, 1861-1874*. Little Rock, AR: Arkansas Division, United Daughters of the Confederacy, 1926.
- Wiley, Bell Irvin. *The Life of Billy Yank: The Common Soldier of the Union*. Baton Rouge: Louisiana State University Press, 1952.

———. *The Life of Johnny Reb: The Common Soldier of the Confederacy*. Baton Rouge: Louisiana State University Press, 1943.

Woods, James M. *Rebellion and Realignment: Arkansas' Road to Secession*. Fayetteville: University of Arkansas Press, 1987.

Woodworth, Steven E. *Jefferson Davis and His Generals*. Lawrence: University of Kansas Press, 1990.

JOURNAL ARTICLES AND BOOK CHAPTERS

Adams, George Worthington. "Confederate Medicine." *The Journal of Southern History* 6, no. 2 (May 1940): 151-66.

Albin, Maurice S. "Anesthetics during the Civil War, 1861-65." *Pharmacy in History* 42, no. 3/4 (2000): 99-114.

Allemann, Albert. "Brown, Harvey E." In *American Medical Biographies*, ed. Howard A. Kelly and Walter L. Burrage (Baltimore, MD: The Norman, Remington Company, 1920), 153.

Bailey, Anne. "Theophilus Hunter Holmes." In *The Confederate General*, 6 vols., edited by William C. Davis, 3: 116-7. Harrisburg, PA: National Historical Society, 1991.

Barr, Alwyn. "Confederate Artillery in Arkansas." *Arkansas Historical Quarterly* 22, no. 3 (1963): 238-72.

Bearss, Edwin C. "Thomas Carmichael Hindman." In *The Confederate General*. Edited by William C. Davis. Harrisburg, PA: The National Historical Society, 1991.

———. "General Cooper's C.S.A. Indians Threaten Fort Smith." *Arkansas Historical Quarterly* 26 (Spring 1967): 257-84.

Bedard, Robert M. "Four Connecticut Physicians: Window to Civil War Medicine and Service." *Connecticut Medicine* 73, no. 2 (2009): 87-93.

Bell, Jr., W.J. "Richard H. Shryock: Life and Work of a Historian." *Journal of the History of Medicine and Allied Science* 29, no. 1 (1974): 15-31.

Brown, Mattie. "River Transport in Arkansas, 1819-1890." *Arkansas Historical Quarterly* 1 (Winter 1942): 342-54.

Campbell, Robert M. "Techniques of Confederate Surgeons in the Civil War." *AORN Journal* 8, no. 1 (July 1968): 43-49.

- Carmichael, Maude. "Federal Experiments with Negro Labor on Abandoned Plantations In Arkansas: 1862-1865." *Arkansas Historical Quarterly* 1, no. 2 (Summer 1942): 101-16.
- "Contributors to This Issue." *Civil War History* 33 (March 1987): 4.
- Fischer, LeRoy. "David O. Dodd: Folk Hero of Confederate Arkansas." *Arkansas Historical Quarterly* 7, no. 2 (1978): 130-46
- Geise, William R. "Kirby Smithdom, 1864: A Study of Organization and Command in the Trans-Mississippi West." *Military History of Texas and the Southwest* 15 (1979): 17-35.
- Greenwood, John T. "Louis Casper Duncan, M.D." *Military Surgeon* 87, no. 6 (December 1940): 585. Accessed October 14, 2012. <http://history.amedd.army.mil/booksdocs/rev/MedMen/LouisCDuncan.html>.
- Hall, Courtney Robert. "The Influence of the Medical Department Upon Confederate War Operations." *The Journal of the American Military History Foundation* 1, no. 2 (Summer 1937): 46-54.
- Hardin, Joe G. "Rheumatic Pain." In *Clinical Methods: The History, Physical and Laboratory Examinations*. 3rd ed. Edited by H.K. Walker, W.D. Hall, and J.W. Hurst. Boston: Butterworths, 1990.
- Harrell, John M. "Arkansas." In *Confederate Military History*, 12 vols. Edited by Clement A. Evans, 10, part 2: 3-419. Atlanta: Confederate Publishing Company, 1899.
- Harrington, Fred H. "Arkansas Defends the Mississippi." *Arkansas Historical Quarterly* 4, no. 2 (1945): 109-117.
- Hasegawa, Guy R. "Pharmacy in the American Civil War," *Pharmacy in History* 42, no. 3/4 (2000): 67-86.
- . "Quinine Substitutes in the Confederate Army." *Military Medicine* 172, no. 6 (June 2007): 650-5.
- Hasegawa, Guy R., and F Terry Hambrecht. "The Confederate Medical Laboratories." *Southern Medical Journal* 96, no. 12 (2003): 1221-30.
- Huff, Leo E. "The Union Expedition Against Little Rock." *Arkansas Historical Quarterly* 22 (1963): 224-37.

- Jones, J.B. "A Tale of Two Cities: The Hidden Battle Against Venereal Disease in Civil War Nashville and Memphis." *Civil War History* 31, no. 3 (1985): 270-6.
- Kohl, Rhonda M. "'This Godforsaken Town:' Death and Disease at Helena, Arkansas, 1862-63." *Civil War History* 50, no. 2 (June 2004): 109-44.
- Lewis, Elsie M. "Robert Ward Johnson: Militant Spokesman of the Old-South-West." *Arkansas Historical Quarterly* 13, no. 1 (1954): 16-30.
- Marrow, John P. "Confederate Generals from Arkansas." *Arkansas Historical Quarterly* 21, no. 3 (Autumn 1962): 231-46.
- Massey, Mary Elizabeth. "The Effect of Shortages on the Confederate Homefront." *Arkansas Historical Quarterly* 9, no. 3 (1950): 172-192.
- Moneyhon, Carl J. "The Impact of the Civil War in Arkansas: Mississippi River Plantation Counties." *Arkansas Historical Quarterly* 51, no. 2 (1992): 105-17
- . "From Slave to Free Labor: The Federal Plantation Experiment in Arkansas." *Arkansas Historical Quarterly* 53, no. 2 (1994): 137-60.
- Nicholson, William L. "The Engagement at Jenkin's Ferry." *Annals of Iowa* 9 (1914): 505-519.
- Radcliffe College. "Report of the Graduate School of Arts and Sciences." In *Reports of College Officers, 1934-1935*. Cambridge, MA: Harvard University Press, 1936. Accessed December 11, 2013. <http://nrs.harvard.edu/urn-3:rad.arch:14990?n=21>.
- Richards, Ira Don. "The Battle of Jenkins' Ferry." *Arkansas Historical Quarterly* 20, no. 1 (1961): 3-16.
- . "The Battle of Poison Spring." *Arkansas Historical Quarterly* 18, no. 4 (1959): 338-49.
- . "The Engagement at Marks' Mill." *Arkansas Historical Quarterly* 19, no. 1 (1960): 51-60.
- Rothrock, Thomas "Dr. David Yancey Thomas." *Arkansas Historical Quarterly* 27, no. 3 (1968): 246-57.
- Scheiber, Harry N. "The Pay for Troops and Confederate Morale in the Trans-Mississippi West." *Arkansas Historical Quarterly* 18, no. 4 (1959): 350-65.
- Scott, Kim Allen. "Eloquent Brevity: The Arkansas Campaign Diary of Henry Elliott Thompson." *Arkansas Historical Quarterly* 70, no. 2 (2011): 162-94.

- . “Witness for Prosecution: The Civil War Letter of Lieutenant George Taylor.” *Arkansas Historical Quarterly* 48, no. 3 (1989): 260-71.
- Shea, William L. “The Road to Pea Ridge,” *Arkansas Historical Quarterly* 52, no. 3 (1993): 205-22.
- Shryock, Richard H. “A Medical Perspective on the Civil War.” *American Quarterly* 14, no. 2 (Summer 1962): 161-173.
- Slawson, Robert G. “Medical Training in the United States Prior to the Civil War.” *Journal of Evidence-Based Complementary & Alternative Medicine* 17, no. 11 (2012): 11-27.
- Smith, Robert F. “The Confederate Attempt to Counteract Union Propaganda in Arkansas, 1863-1865” *Arkansas Historical Quarterly* 16, no. 1 (1957): 54-62.
- Sutherland, Daniel E. “Guerrillas: The Real War in Arkansas.” *Arkansas Historical Quarterly* 52 (Autumn 1993): 257-85.
- Temkin, Owsei “Richard Harrison Shryock: 1893-1972.” *Journal of the History of Medicine and Allied Sciences* 27, no. 2 (1972): 131-2.
- Thompson, Tommy R. “Searching for the American Dream in Arkansas: Letters of a Pioneer Family.” *Arkansas Historical Quarterly* 38, no. 2 (1979): 167-81.
- Toledo-Pereyra, Louis H. and Alexander Horacio Toledo. “American Civil War: Part I.” *Journal of Investigative Surgery* 17 (2004): 115-7.
- Trombold, John M. “Gangrene Therapy and Antisepsis Before Lister: The Civil War Contributions of Middleton Goldsmith of Louisville.” *The American Surgeon* 77, no. 9 (September 2011): 1138-43.
- Ulbricht, Catherine, Ethan Basch, Paul Hammerness, Mamta Vora, John Wylie, Jr., and Jen Woods. “An Evidence-Based Systematic Review of Belladonna by the Natural Standard Research Collaboration.” *Journal of Herbal Pharmacotherapy* 4, no.4 (2004): 61-90.
- Williams, C. Fred. “The Bear State Image: Arkansas in the Nineteenth Century.” *Arkansas Historical Quarterly* 39 (Summer 1980): 99-111.
- Williams, Charles G. “The Confederate Home Guard in Southwest Arkansas.” *Arkansas Historical Quarterly* 49, no. 2 (1990): 168-72.
- Wilson, J. Woodfin. “Some Aspects of Medical Services in the Trans-Mississippi Department of the Confederate States of America, 1863-1865.” *Journal of the North Louisiana Historical Association* 12 (1981): 123-146.

Woodworth, Steven E. "Dismembering the Confederacy: Jefferson Davis and the Trans-Mississippi West." *Military History of Texas and the Southwest* 20 (1990): 1-22.

Worley, Ted R. "The Arkansas Peace Society of 1861: A Study of Mountain Unionism." *Arkansas Historical Quarterly* 24, no. 4 (1958): 445-56.

Zornow, William Frank. "State Aid of Indigent Soldiers and Their Families in Arkansas, 1861-1865." *Arkansas Historical Quarterly* 14, no. 2 (1955): 97-102.

NEWSPAPERS

Freehling, Alison. "High Profile: Ludwell Johnson." *Daily Press* (Hampton Roads, Virginia), February 3, 1997. Accessed December 12, 2013. http://articles.dailypress.com/1997-02-03/news/9702030046_1_civil-war-william-andmary-battles.

WEBSITES

Centers for Disease Control and Prevention. "Cholera-*Vibrio cholera* infection." Accessed February 17, 2014. <http://www.cdc.gov/cholera/general/index.html>.

———. "Malaria." Accessed February 11, 2014. <http://www.cdc.gov/malaria/about/disease.html>.

———. "Measles (Rubella)." Accessed February 10, 2014. <http://www.cdc.gov/measles/about/overview.html>.

———. "Smallpox Fact Sheet." Accessed February 10, 2014. <http://www.cdc.gov/agent/smallpox/overview/disease-facts.asp>.

———. "Typhoid Fever." Accessed February 10, 2014. http://www.cdc.gov/nczved/divisions/dfbmd/diseases/typhoid_fever/technical.html.

The Department of Arkansas Heritage. "News Release: Civil War Seminar Slated by the Old State House Museum." Old State House Museum. Accessed December 20, 2013. <http://www.oldstatehouse.com/userfiles/pdf/News%20Release%202012%20July%20CW%20Seminar.pdf>.

Fisher Scientific. "Material Safety Data Sheet: Mercury." Vanderbilt University. Accessed February 17, 2014. <http://www.safety.vanderbilt.edu/msds/products/mercury.pdf>.

Foti, Thomas. "Geography and Geology." *The Encyclopedia of Arkansas History & Culture*. Accessed January 12, 2014. <http://www.encyclopediaofarkansas.net/encyclopedia/entry-detail.aspx?entryID=401#>.

“Graduation 2005: New emeritus faculty honored at graduation.” *Reporter* May 20, 2005. Accessed 10 October 2012. <https://www.mc.vanderbilt.edu/reporter/index.html?ID=3986>.

Hunt, Margaret. “Virology Chapter Fourteen: Measles (Rubeola) and Mumps Viruses.” University of South Carolina School of Medicine. Accessed February 10, 2014. <http://pathmicro.med.sc.edu/mhunt/mump-meas.htm>.

Louisiana State University Press. “Doctors in Gray.” Accessed January 23, 2013. <http://lsupress.org/books/detail/doctors-in-gray/>.

Southern Illinois University Special Collections Research Center. “Adams, George Worthington.” Morris Library Special Collections. Accessed October 12, 2012. <http://archives.lib.siu.edu/index.php?p=creators/creator&id=205>.

University of North Carolina-Greensboro Libraries. “Cunningham, Horace Herndon.” North Carolina Literary Map. Accessed October 5, 2012. <http://library.uncg.edu/dp/nclitmap/details.aspx?typ=auth&id=4217>.

University of North Carolina Libraries. “Fletcher Melvin Green Papers, 1898-1980: Biographical Information.” The Southern Historical Collection at the Louis Round Wilson Special Collections Library. Accessed October 5, 2012. http://www.lib.unc.edu/mss/inv/g/Green,Fletcher_Melvin.html#d1e181.